# The Iron A

### A Review of the Hardware and Metal Trades.

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Schlenker's Automatic Revolving Die Bolt Cutter with Nut Tapping Com-

This machine will cut threads on bolts and tap nuts from %ths to 8 inches in diameter inclusive. It is back geared, and has seven changes of speed. The dies are opened automatically when the desired length of thread has been cut upon the bolt, and can be changed from one size to another in less than one minute. The oil is strained from the chips by a strainer, and the machine is supplied with a Schlenker pump for lubricating, which furnishes a constant supply of oil. The nut tapping apparatus enables the operator to tap nuts from %ths to 11/4 inches inclusive, at the same time the thread is being cut upon the bolts, which is a large saving of time on all bolts less than 11% inches in diameter. Nuts for bolts larger than 11/4 inches are tapped upon the main spindle. With the machine are furnished 18 sets dies, with steel chucks, increasing by eighths, 18 master taps, 8 nut tap holders, 3 dies and steel chucks for nut tapping, counter shaft complete and steel wrench. The machine illustrated is very heavy and strong, and intended for large work. Smaller sizes are made -or rather smaller machines having the same general features but differing slightly in design and unimportant details. The smallest of these cuts threads and tap nuts from 1/4 inch to % inch inclusive. What is called the No. 5 machine has a range of from 1/4 to 11/4 inches, and is capable of turning out from 3000 to 3500 %th bolts, with 11/4 inches of thread, per day, which is very rapid work. These machines will cut square threads, coach screws and a V thread, and will take in crooked as well as straight work. Those who have used these machines say that they cut a perfect and clean thread, going over the bolt but once, and are adapted to all kinds of bolts, whether crooked or straight. Some of the points of these dies are well worth attention. They are cheap, are opened sutomatically, can be ground when dull, can be recut many times, and save running back off the thread. The muchines can be operated by any boy who can read figures, and the makers state that the threads cut with them will not vary half a thread in length on 10,000 bolts. The gears are all cut, and all the wearing parts are of steel, tempered. The bearings are large. Great stress may be laid upon the fact that the action of the dies in this machine is the same as a lathe tool, taking a clean chip and leaving a strong perfect thread. The Howard Iron Works, Rufus L. Howard, Buffalo, N. Y., manufacture

On the Hot Blast, with an Explanation of its Mode of Action in Iron Furnaces of Different Capacities.\*

BY I. LOWTHIAN BELL, M. P., F. R. S.

There has been, probably, no improvement introduced into the manufacture of iron, which in atmospheric air-proving that the materials created more surprise in the minds of practical smelters and of scientific men, than Neilson's discovery of the hot blast.

for the consumption of the furnace itself. In nected with the formation of cyanogen salts, hundred weights of coal burnt in the hot air effect of the alteration the year 1838, by heating the air to 612° F. (322° the value of bight in the blust furnace must apparatus, saving a much larger weight in fur-C.) they reduced this 7% to 3 tons by the mere burning of 8 cwts. of coal in the apparatus for raising the blast to this temperature. The gases generated by the combustion of the fuel with that of a mere addition of capacity. statement first given was strictly true in a com- at the tuyeres. These gases, immensely exmercial sense, but when we come to consider panded by the high temperature prevailing in the substitution of heated for cold air is equivthe question as one of physical science, it is the hearth, arrive speedily at the point of exit, alent to an increase in the capacity of the necessary to eliminate some of the conditions which conduce to so extraordinary a result.

Anterior to Nellson's time, the fuel employed

in smelting iron was coke, and it was supposed at that period, erroneously, however, that coal in its raw state when burn; with cold air, was totally unfit for the purpose in question. This mineral, as it was obtained from the Lanarkshire coal fields, contains about 35 per cent. of volatile matter, but the process of charring it was performed in so unskillful a manner that instead of receiving 88 cwts, of coke from 135 cwts. of coal, 60 cwts. only was the product of the operation. Again, the reduced consumption of carbon in the furnace itself was accompanied by a corresponding diminution of blast, and this was followed by an economy of half a ton in engine coal. After making a proper form the fuel has to assume before it is burnt in the blast furnace, not less than 30 cwts. was saved by heating the blast to 612° F. (322° C.) This unexpected economy, be it remembered,

Numerous have been the opinions advanced fice to reduce it to the state of carbonic oxide in hot blast. This is too small a margin to bring a sufficiently long time to obtain a pretty close by different authorities in the scientific world to the manner already stated. account for this apparent anomaly, but none, in By means of suitable openings in the sides

you certain views which I have been led to the top, they had attained a full red heat, adopt, after bestowing upon the subject some whereas in the larger its contents do not acquire considerable attention.

to review very briefly the nature of the process plates. carried on in an iron furnace, whether it be with hot or cold air.

In opposition to opinions formerly expressed, I ascertained during an extensive series of ex- tion, were found in the loftier furnace, whereas periments that oxide of iron was susceptible of something like one-fifth of this higher oxide reduction to the metallic state at temperatures of carbon bad disappeared in the other. far below that believed to be necessary. This When it is borne in mind that the heat genwas proven in a variety of ways. Oxide of iron erated by carbon burned to carbonic acid, and obtained artificially, and as it exists in various carbonic oxide to carbonic acid, is as 3.33 to 1, ores, was exposed at known temperatures, in the great importance of avoiding using carbon the laboratory, to a current of carbonic oxide, as well as to a mixture of this gas with different proportions of carbonic acid, the latter substance, as is well known, being the product of the reduction in the blast furnace. Secondly, in view of the imperceptible character of the superior to that of one blown with cold air, the same substance was afterward placed in advantages of additions to furnaces in favor of and by so much at least is the useful capacity cavities in the blast furnace, so as to secure as the fuel, he did not wonder that the subject had of the former raised by the change. We have nearly as possible a heat analagous to that it not been pursued further.] undergoes in the actual process of smelting. About the period just spoken of an experi-

my humble opinion, satisfactorily explains the of two furnaces, one 48 and the other 80 feet, mode of action of the hot blast. The object of I learned that in the lesser, by the time the this communication, therefore, is to present to materials had reached the depth of 12 feet from this temperature until they have descended to Before proceeding to do this I would ask you a distance of about 24 feet from the charging

Repeated analysis of gases showed that nearly the full equivalent of carbonic acid due to reduction, and carbonic oxide due to dissociain solid form as a reducing agent will be at once

[Mr. Bell stated that until a dozen years ago

the consumption of coke per ton of iron to the approximation to a correct average. The iron same figure in each case, but as furnaces recelving air at a high temperature afford a much a mixture of blast furnace slag and splints was larger produce of the two, the economy of fuel charged in its stead. During the use of these cannot be said to accompany in a ratable manner the increase of useful capacity, when such increase is the consequence of diminution of the volume of gaseous matter passing through

oke, ore and limestone are changed, the power ing one, is of importance, because to it, in my opinion, is due the fact that after certain diof the mixture to intercept and return to the hearth the ascending heat of the gases, is also modified at the same time. Experimentally, it was shown that the materials used on the banks of the River Tees possessed, bulk for quantity of the solid material used in the probulk, the following cooling properties on gases passing through them at a temperature a little above that of melting zinc :

Calcined Cleveland iron stone..

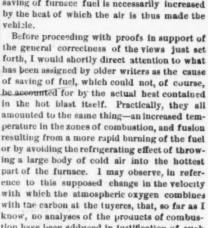
From these figures it was estimated that the ordinary burden of a hot blast furnace posrushing upward through the contents of the furnace an immense volume of highly

ore was then withdrawn and an equal weight of substances, inert so far as any chemical action between them and carbonic oxide is concerned, the average temperature of the gases fell about 100° C. (212°F).

It will be shown hereafter that the circum-If from any cause the relative proportions of stance of the upper region being a heat evolvmensions of furnaces are reached, no further cooling of the escaping gases ensues, from their having to pass through an increased gases are due either to the size of the furnace or to a diminution of their volume, as happens where heated air is employed, does not suffice to account for all the economy effected by pursuing either of these modes of working. We are led to consider whether the chemical conditions attending the process are not modified by the change, and modified in the same way in both cases, when we raise the temperature of the blast or increase the capacity of the furnace. The only phenomena of a purely chemi-cal nature necessary to be considered for our present purpose is the reduction of the irou to its metallic state and the behavior of the carbonic acid which accompanies this process. The deoxidation of an ore of iron is, of course, a work of time, for the reducing gas has to penetrate into masses of greater or less magnitude. If before it has done this in a perfect manner the mineral reaches a zone of the furnace where the temperature enables the carbon of the fuel to attack the carbonic acid generated by the act of reduction, we have to submit to the loss already referred to. Should this reversed action take place to the extent of one-half the carbonic acid due to the operation, a loss of about 20 per cent. of the heat required for the smelting of a ton of pig iron ensues. The advantage, therefore, resulting from the use of a sufficiently lofty furnace is the adjustment of the temperature of its different zones, so that the ore is reduced under circumstances where, so far as possible, this underburning, as it were, of carbonic acid is avoided. The same end is obtained by diminishing the volume of the gases attending the generation of a given amount of heat. This happens when the full blast itself is raised in temperature, while the saving of furnace fuel is necessarily increased by the heat of which the air is thus made the vehizle.

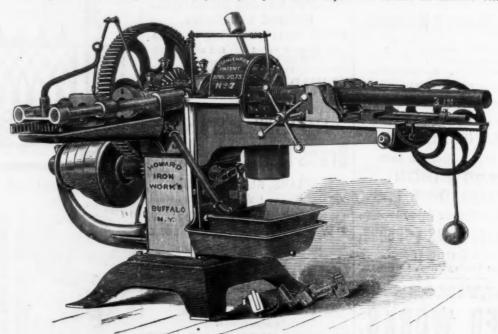
> the general correctness of the views just set forth, I would shortly direct attention to what has been assigned by older writers as the cause he accounted for by the actual heat contained in the hot blast itself. Practically, they all amounted to the same thing-an increased temresulting from a more rapid burning of the fuel ing a large body of cold air into the hottest ence to this supposed change in the velocity with the carbon at the tuyeres, that, so far as I

an hypothesis.



The experience afforded by the Siemens regenerative furnace might appear to warrant the conclusion of an increased intensity of temperature by the preliminary heating of the blast. There is, however, no real analogy be-Within certain limits, therefore, the gases tween heating the air for smelting from and that required by Siemens, because in every cold blast furnace the so-called "regenerative" principle is already in constant operation. The materials above the tuyeres in it, as they descend in a continuous stream, perform precisely the same office as that obtained from the back cells of the regenerator. I have sought upon different occasions to learn to what extent the incoming solid contents of a blast furnace acted in the ing zone of the furnace, which is one of 48 manner just described. Immediately on blowfeet in hight, is confined to a third or a fourth ling in, the temperature of the escaping gases of its upper part. Of the 86 units, already re- was taken, and observations on this point were continued until their mean heat became stafuel, fully one-third is due to the conversion of tionsry. By estimating the total quantity prosion is exclusively effected by the oxide of tion, and deducting from it the heat known to iron of the ore. It is true the escaping gases be absorbed by the performed duty, the differ-So far, then, as an abstract question of vol- do not by their temperature indicate that so ence was regarded as that retained by the maume of gas is concerned, 14 per cent. in the in- large a proportion of the heat developed by the terials. From the data thus procured it was combustion of the fuel is produced so near estimated that during any given time, of the heat actually available in the hearth, 70 per nel head than if 96 units of heat had resulted ponding amount of sensible heat in the gases cent. was due to that previously generated and from the combustion of carbon, fed with air at is due to its absorption by the oxygen in its returned to the region of fusion by the current 0. C (32° F.) If, however, we propose to our- change from the solid to the gaseous form. of solids during its descent. Attending the In addition to the source of carbon just selves the problem as to the increase of capacity The balance between these opposing tenden-supposed more rapid combustion at the tuyeres was an elevation of temperature which, in some unexplained way, had to operate beneficially carbon and one of carbonic acid. It is equally tributed by the blast, 7000 cubic feet in one gation the subject of direct experiment on a to have been overlooked that the addition of

[Continued on page 15.]



IMPROVED BOLT CUTTING AND NUT TAPPING MACHINE.

Thirdly, the gases of different furnaces, taken at | ment of a much bolder nature was undertaken | heated gas, meeting a descending column of lyzed, by which means it was ascertained when under treatment had at certain points ceased to give off any notable quantity of oxygen.

iscovery of the hot blast.

In a very few minutes after the materials are shot into the throat of the furnace, In 1829, Messrs. Dunlop & Co., consumed at the Clyde Works, near Glasgow, nearly 7% tons of coal to make a ton of pig iron, of which about 20 cwts. were employed under the bollers of the blowing engines, leaving nearly 7 tons of the blowing engines, leaving nearly 7 tons of the blowing engines, leaving nearly 7 tons of the furnace, the saving of cox to any mysterious peculiars. The saving of cox to any mysterious peculiars which rendered it necessary for some weeks to with which the atmospheric oxygen combines which rendered it necessary for some weeks to with which the atmospheric oxygen combines which rendered it necessary for some weeks to with which the atmospheric oxygen combines which rendered it necessary for some weeks to with the earbon at the tuyeres, that, so far as I the puzzling doctrine, as has been done to account for the heaving a hight of 48 and a capacity of 6000 cubic feet. The following shows the products of combustions peculiars. only be regarded as a means of intercepting the heat carried up by the rapid current of tify the mode of action of the hot blast furnace and, in event of the furnace being of insufficient furnace, and then to follow this up by pointing hight, they earry with them, in the form of out other circumstances which, in my judgsensible heat, the useful effect of a considerable ment, perform a supplementary part in raising portion of the combustible employed in the operation.

This, however, is not the sum of the loss due to inadequate dimension. Each equivalent of peroxide of fron, the usual component of metal, as it exists in our ores, requires for its reduction three equivalents of carbon, which may be present either in solid form or as the gas carbonic oxide. In the former case carbonic the conclusion that out of every 100 heat units oxide, and in the latter carbonic acid, is the product of the reaction. In most cases it is the lower oxide of carbon which is the immediate agent of reduction; but in the event of this generation taking place when the contents of the furnace are at a high temperature, carbonic allowance, however, for all these collateral cir- acid is brought back to the state of carbonic cumstances, we are within the mark when we oxide by meeting with highly incandescent admit that in actual coke, which is really the carbon. In this way, to all intents, the heat evolved does not exceed that obtained by

burning carbon direct to this last named gas. named, there is a second arising from the dissoalso, was obtained by the combustion of the 8 ciation of carbonic oxide, two equivalents of the contents of a furnace to correspond with ful, and at the same time an important matter cwts. of coal somewhat wastefully applied in which are split up by oxide of iron into one of the diminution of volume due to the heat conimportant that this action should also be blown with cold air ought to be equal to the large scale. The temperature of the gases more material to be acted on by a given weight

different hights above the tuyeres, were ana- by Messrs. Bolckow, Vaughan & Co., Middles- solid cooler material. In cases where these two borough, who raised a furnace from 45 to 75 currents are moving more slowly than in others the combined oxygen appeared in quantity to feet, with the original boshes of 15 to 16 feet. it might be imagined a priori that the gases that corresponding with the nitrogen as found Still further enlargements were made at a later would part with more of their heat, and that, period.

would have occurred to us to have attributed excess of the power of the structure. the saving of coke to any mysterious peculiarnace, we would probably have sought to iden-

I propose to show, in the first instance, how

the efficiency of a furnace using hot blast, In all cases the fuel used is considered as coke, iron as No. 3, and the air was heated by waste gases. These were collected by hermetically closing the furnace by the cup and cone.

By repeated analyses of the gases from a 48 foot hot blast furnace, and by careful examination of the temperature of the air, I was led to evolved in its interior there was due to

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stance just quoted is produced without any

as a natural consequence, the consumption of Had the use of furnaces 70 or 80 feet high fuel would be lessened. The very reverse, howpreceded Nellson's invention, I do not think it ever, is the fact, unless the rate of driving is in

Circumstances arose at the Clarence Works

Average Make per Week Normal Speed of Work

rise in temperature under such conditions as those just described. The heat carried out by the furnace repre

sents so much loss, and more or less the effect of the change manifests itself in the figures by an increase in the quantity of combustible required for the same duty. The phenomenon just described I conceive to be due to the generation of heat which takes place in the reducferred to as evolved by the combustion of the carbonic oxide to carbonic acid, which conver- duced by the coke during the period in quesmore vaporous matter escaping from the tun- their point of exit. The absence of a corresrequired to permit the flow of gases through cies is not considerable, and it being a doubteffected when the temperature does not suf- duty performed in 6000 cubic feet, worked with escaping from a furnace was observed during

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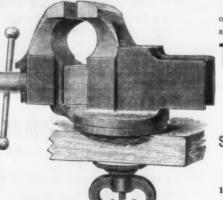
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#### "Centennial Chimes."

Of the many interesting features at the Cen tennial Exhibition, few attract more attention or give more real pleasure to the great multi tudes that will there assemble, than the music from the chime of bells exhibited by th: McShane Bell Foundry, of Baltimore. It is the only chime in the Exhibition, and is composed of 13 belis, representing the 13 original States of the Union. These bells are all large, the smallest weighing about 300 lbs., and the largest upward of 4000 lbs., the 13 aggregating over 21,000 lbs. They comprise a full octave and one-third, with a flat seventh and a sharp fourth, and possess clearness, richness of tone and great volume of sound, and are constructed in the most admirable and substantial manner The bells are hung in the main tower, on the northeast angle of Machinery Hall, near the main entrance (Belmont Avenue) to the exhibi tion grounds. These are the first chime of bells ever cast in the State of Maryland, and are in charge of Professor Widdows, the famous chime ringer of Metropolitan Church, in Washington, D. C., who is a thorough musician, and who has achieved the reputation of being one of the finest "chimers" in the world.

The bells are hung in a heavy oaken frame, with the largest of the 13 bells in the center, and are "played upon" by two rows of levers and one row of pedals, by means of steel wires and cast iron elbows attached to the bell ham mers, rendering manipulation remarkably easy The chime was cast expressly for exhibition at the Centennial at a cost of over \$10,000, and will prove one of the most pleasing of the many attractions there, and is no doubt the most costly "exhibit" made by any single firm in the world, and, without exception, are the finest chime of bells ever cast in this country. On the opening day, May 10th, they were rung at sunrise. On that day, at 9 o'clock a. m. when the representation of the nations of the earth had gathered together, and the officials high in position of our own country had met to formally open the Exhibition, which, after several years of arduous labor and anxiety has thus far been crowned with success, the chimes from the McShane Bell Foundry, of Baltimore, were the first to proclaim the glad tidings, ring ing out in clear, resonant tones, the news to the world.

The bells from this well known establish ment excel in volume of sound and richness of tone and superior workmanship. A peculiarity of the bells of the McShane Bell Foundry is the attention given to musical laws in the tone of them; even the largest size, some 15,000 lbs. sounding exactly the note which it was east for. All bells cast at this foundry are made of genuine bell metal, composed of Lake Superior copper (carrying silver) and government banca tin. and are so modeled as to secure that proportion between the diameter, hight and thickness, as shall produce the desired acoustic effect in the highest degree. In this particular these belief are most excellent, all their patterns being made from mathematical formula, which they have deducted from the results of a long course of study and 40 years' experience. The establishment of Messrs. McShane & Co.

is one of the largest and best equipped in the country, and possesses every facility for the production of bells of every description, such as church bells, fire alarm, chimes, court house, academy and factory bells, ship, steamboat, plantation and farm bells, all of which are made in the best manner, and strictly first-class in in the best manner, and strictly first-class in each and every particular. A specialty being made of chimes and peals of bells of any number, in perfect tune and accord with each other, and arranged to be played by one person upon levers, so that any one able to read music can play tunes upon them. The members of the firm are Henry and John McShane, who are thorough, practical business men, understanding the art of bell making in every detail, and the costly chime of musical bells which they have placed in the great tower of Machinery Hall, is an evidence of the interest they have taken in the Centennial. The chimes ring out morning, noon and evening over the bum of the busy crowds.—*Philadelphia Commercial*.

Engineering History of the Country.

The following is a synopsis of a very interesting paper read at the annual meeting of the American Society of Civil Engineers, held in Philadelphia, last week, by Mr. Theodore G. Ellis, of Hartford, vice-president: Washington was the first civil engineer of which the speaker had found any record. He gave ome attention to canals, and was afterward on a commission for improving the navigation of the Potomac. The year 1787 was a date of great interest to the profession. In that year, John Fitch, a Philadelphian, built the first steamboat, and there is every reason to believe that when he built it he was ignorant of Watt's improvements. He built the first propeller ever constructed in 1796; in 1798 he built the first steamboat for carrying passengers, and in 1799 ran it on the Delaware, between Philadelphia and Burlington. In 1804 Oliver Evans, of Philadelphia, constructed the first machine for building docks-a heavy, flat bottom boat, with a chain and buckets to clear out the mud. It had wheels for land and a stern wheel to propel it in the water. It seems to have been the archetype of stern wheel boats. At this time stage coaches had not come iuto use. In 1807 Robert Fulton built his steamboat, and in 1811 he and Mr. Stephenson built a stern wheel boat at Pittsburgh, with which voyage was made to New Orleans in 14 days. This was the first steamboat on Western waters.

The introduction of stage coaches produced demand for bridges across the larger streams, and here was a fine field for engineering talent. Among these early structures was the magnificent 340 feet span over the Schuylkill, built in 1812 and burned in 1838. Travel between New York and Philadelphia a century ago can be estimated from the advertisements in the daily prints of that day, naming the time at which a stage coach would leave for New York twice a week. On the celebration of the semi-Centennial anniversary it was recorded as a matter of great wonderment that as many as 300 New Yorkers were in Philadelphia. In 1823 the Champlain Canal was fluished and several others were in progress. About this time the evidences of progress in civil engineering began to multiply, railroads were first talked of, and there were few to prophesy what should result from their introduction. In fact, it was authoritatively stated that the claim that locomotives would some day travel 12 miles an hour was bringing ridicule and harm to the whole pro-

The first locomotive run in this country was built in England and was called the Lion. The first built in this country was constructed on West street, New York, in 1829. It was a four wheeler with upright boiler, and was built for the South Carolina road. Baldwin commenced to build engines in 1833. The first iron railroad bridge consisted of three spans 55 feet long for the Baltimore and Susquebanna Railroad Company in 1846, built by James Mulholiand. Iron suspension bridges were previously used in 1796, over Jacob's Creek, Virginia, built by Mr. Finley. Iron bridges, however, dld not come into general use until just before the civil

In fact, in the short space of a century, American engineering has sprung from obscurity to be equal to any in the world. We have the longest bridges, with the greatest span and deepest foundations, and the only railway suspension indge in the world; the longest railways, the best equipped, and supplied with the nost comfortable conveniences. It is idle to prophesy where another century's progress may find it. The day will come when men will smile at iron bridges when a lighter, stronger and more abundant metal will supplant iron. In a uminum is found lightness combined with In a uninum is found lightness combined with strength, the only drawback to its use being the expense of extracting it from its combinations. It is not too much to expect to see bridges of a mile span made out of this metal. It is peculiarly appropriate that the convention should meet in Philadelphia on this Centennial year, for it is well known to most of the members that the science of engineering in this country commenced in Philadelphia, and many of the great inventions which gave an impetus of the great inventions which gave an to it can be traced dir ctly to that city.

tennial Exhibition .- The following list will e found convenient for reference by exhibtors in Machinery Hall : John S. Albert-Chief of Bureau of Machinery

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HUNDLEY.

North Carolina Handle Co., (WILSON & SHOBER, Proprietors.)

region of SPORES, AXE, Plok, SLEDGE, HARRER, HATCHET and other very capital arrangement to prevent heating a kitchen in summer. For those who are obliged pieces. They have one of Mexican onyx, with plows.

Stoves, &c., at the Centennial.

THE OPEN STOVE VENTILATING CO. of New York, make an interesting exhibit of their specialty, "The Fire on the Hearth." The distinctive feature claimed for "The Fire on the Hearth" stove is a drum or expansion chamber situated above an open fire, and so surrounded by a jacket as to provide an efficient air-warming and air-circulating apparatus, in combination with the traditional merit of fireplace radiation and ventilation. The "Fire on the Hearth" is, in fact, a double stove, the inner one being used to convey the gasses from combustion out of the room, while the space between the two serves for a capacious air-warming chamber that supplies the living room for respiration and bodily The utilization of heat by this comfort. method is said to be so complete that when the blower is off the stove, the smoke pipe is usually cool enough to bear the touch without discomfort, showing that the maximum amount of heat has been abstracted and distributed throughout the room. Remove the drum from this stove, which gives its superior air-warming power, and practically we have the old-fashioned Franklin. Place the blower in situ, and we have an ordinary close stove and portable furnace; when the fire is well ignited, remove the blower, and we have a cheerful and efficient warming and ventilating apparatus, which will meet the approval of sanitarians everywhere.

JAMES SPEAR & CO., of Philadelphia, make a display of stoves which are well worthy of a careful examination. The latest pattern is the Argus Anti-Clinker of 1876, which has been specially improved and beautified for this year's trade. It possesses all the late improvements applied to their anti-clinker grate; has the revertible flue, burnished edges and plated turnbuckles, and in proportions and style of ornamentation is very beautiful. Their Franklin Reflector is also of elegant appearance, and seems to meet with general favor. The advantages claimed for this stove are as follows: "It is entirely free from dust, the heat is not lost up the chimney, and the fire can be easily regulated. It does not throw out gas in a weak draft, and with the patented reflector, the heating qualities of the stove are increased 100 per cent. over any other open stove." The stove is also supplied with patent sliding doors, by which the annoyance of a loose blower is dispensed with. It is also supplied with their patent vibrating anticlinker grate, which, we are informed, has never before been applied to this class of stove. The Anti-Clinker Calorific Cooking Stove is are placed in the front of the stove above the fire doors, which are protected by two sliding cast iron doors closing between them and the fire chamber during the process of lighting the When the stove has become sufficiently heated for baking the sliding doors are withdrawn, which permits the air to flow through the perforated brass doors, igniting the gasses and carrying the excessive heat away from the front, center plate and covers around the oven, thus thoroughly distributing and equalizing the heat around the oven, which, they claim, has never before been accomplished by any stove inventor or manufacturer. They also exhibit "The Silver Moon," "The Golden Sun," and other stoves, and, by way of contrast, an old stove cast in Europe in 1759, imported by the house of Burgess, Yorktown, Va., and which was used in heating the room in which the articles of sarrender to Cornwallis was agreed upon. They have also an open stove, the first ever used in this country-75 years

FULLER, WARREN & CO., of Troy, have a stove building, adjoining Campbell's Press Co., at the west end of Machinery Hall. Here they exhibit the Lauson furnaces, and Mr. Lauson himself have studied the science of heating more closely than he, and the result of years of constant application has enabled him to present manship, and will allow no imperfect heaters through the furnace. to answer equally well for bituminous. It is when they certainly will attract much attention. made entirely of cast iron. Beside large heaters, Fuller, Warren & Co. have parlor furnaces, so fully maintain their reputation in the extent arranged as to heat cottages. These are pro- and character of their exhibits. One portion of quite agreeable, even in this month of June.

J. G. COOEY, of Hyde Park, Mass., presents a "Cottage Kitchen," in which coal oil is the fuel used. The boiler is arranged in four compartments, one above the other, all covered with a condensing dome. By properly adjusted openings the impregnation of one vegetable with the flavor of another is prevented, while the different stews or boils deposit their several condensations in the lower reservoir, where will be able soup. One lamp does all the boiling, that completely surrounds them. The stove is ments in construction. claimed to be economical, and it is certainly a

to reside in close quarters the "Cottage Kitch-

en" will prove useful and healthful. THE BARSTOW STOVE COMPANY,

Providence, R. I., have an improvement that is certainly very desirable. It is an elevated hot closet with sliding doors. complain of doors swinging over their heads, and many an unlucky knock has been received thereby. Of course, no such accidents can occur here. Their portable range, entitled "Empress," is made of wrought from the rivets being driven hot, and the joints made perfectly gas tight. The advantage is an avoidance of danger from the unequal expansion of wrought and cast iron.

H. G. GILES & SON,

of Troy, present very complete portable ranges and stoves. The appearance is attractive, and the philosophy of heating very effectually demonstrated. They have an anti-dust damper to be used while adjusting the fire; also a clearing grate by which the slag, slate, &c., can be let down into the ash-pit without shaking the grate or disturbing the fire. The heat can be regulated readily, and the fire requires very little attention when fairly started. Those who have used these stoves and ranges for some time appear to be well satisfied, and give them a very high character.

ISAAC A. SHEPPARD & CO.,

of Philadelphia, offer a fine display of ranger and stoves that have secured a high reputation. The reservoir can be removed from the stove at pleasure, and plates put on for six Butler holes on top, without cooling off the fire. The flues can be cleaned easily, while there are no extra dampers to be looked after. Their "Americus Range" deserves attention. It contains all the usual appliances, is readily managed, and keeps up a steady fire with a very small consumption of fuel. Great pains are taken to warrant all the products of this firm, and they have received high praise from those who have used their various stoves and ranges. In 1874 they were awarded a silver medal. They have, in addition to their Philadelphia factory, an equally large and flourishing establishment in the city of Baltimore. In both cities they em-Hoy a large number of workmen.

THE TUTTLE & BAILEY MANUFACTURING COM-

PANY,

of New York, have a large display of their elegant ventilators, screens, &c. Their vertical wheel register when placed in the flue, is turned by a pin; when upon the floor, by the foot. Their asylum register is turned by a key, so that the crazy people cannot play with it at pleasure. They also have shallow valve registers, to be placed in thin partitions. Their work will bear close examination, and is of the most creditable another of their inventions, and apparently is character. Among others, they have a variety one of great value. Perforated brass doors of summer aprons for fire-places, and beautiful screens and pedestals finished in gold, marble

READ & COOPER

have their stove flues so arranged that the heat can be taken direct from the fire-box (in part or the whole), under or over the oven, as may be desired. By this contrivance the baking may be regulated to avoid any inequality in the under or upper crust.

THE KITTREDGE CORNICE AND ORNAMENTAL COMPANY,

of Salem, Ohio, have just finished a building of sheet metal, near the Photographic Building.

It is 20x40 feet, and 28 feet high, with a dome with double walls of galvanized and leaded sheet iron. The place is not yet open for display, but will be in a few days. It is neat and highly ornamental. They are now putting up on the inside walls a very large display of their various moldings, cornices, window caps and sills. They claim that their building is cooler than any other upon the grounds, as the double walls protect the inner from too great heat They can mold any pattern that may be sent them, with great facility, and at rates that are exceedingly low. The house is so constructed that it can be easily removed in bulk. Their works at Salem are quite extensive, and alis on hand to explain the details. Few men though the business has sprung into existence within the last five years, they find already plenty of work for from 200 to 300 hands. By the prices given for some work there can be no many valuable improvements. Being a master doubt of its cheapness. There is one strong himself, he knows what is needed in work- recommendation in favor of sheet metal buildings, and that is their safety from fire. On the to go to the public. The flues are so arranged walls they have busts of Washington and as to give a large radiating surface, where the Franklin-good likenesses—in niches, all of this air becomes thoroughly heated in passing new industry. They sell the busts for \$10, and Though intended for the niches at \$20, with the busts. In a week or burning anthracite coal, they have been found two the firm will be ready for public exhibition,

vided with attachments for three pipes on the their space is entirely taken up with a display first floor and two on the second. They are of hollow-ware of various kinds, which appears claimed to be strong, and yet economical to meet with careful scrutiny and general apheaters. In order that they may be seen in preciation, not only from the trade, but from operation, one parlor stove and one large heater all good housekeepers. Among the stoves, in their building have fires in them, and there none is more prominent than the "Sunnyside," have been many days, when they were found and no stove is more generally to be met with in stores and dwellings than this same "Sunnyside," which is probably the best proof that could be given of its universal popularity and general excellence. They also exhibit the "Electric Light" parlor stove, the "Canopy" parlor stove and the improved "Juniata' double heater. The larger sizes of the latter are specially adapted for heating stores, school houses, lecture rooms and churches. In cook stoves they exhibit the "Sunbeam" five-hole range, with patent movable shelf, patented in found when the cooking is over, a very palat- 1875, the new "Sunbeam" range, with warming oven and movable shelf, and the "Barley broiling and steaming. Added to the above is Sheaf," a stove that has been, and still is, iman oven for baking or roasting, and for which mensely popular. The last stove we notice is another lamp is required. In order that the "The Rising Sun," which is not only neat and wick chambers may not become heated, they attractive in appearance, but very reasonable in are provided with a reservoir, or water-jacket, price, and claims some very important improve-

STUART, PETERSON & CO.

A. L. FANCHERE & CO.,

gold and silver bronze trimmings and silver plated grate, which has been purchased by the Emperor of Germany for \$2000, gold. Another very beautiful piece of work is in Griotte, with mirror, trimmed in black, valued at \$2500, and a third of Sarrancolin, with mirror, trimmings in black-price, \$2200. The exhibits of this firm are of special elegance, and attract general attention.

FISHER & BIRD,

New York, exhibit one of the most elegant mantel pieces in the whole building. It is of American statuary marble, carved and ornamented most beautifully. The fire-place and hearth are nickel plated, with bronze fastenings. The effect is very fine, and the display is greatly admired.

THE WILLIAMS MARBLE AND SLATE MANUFAC-TURING COMPANY,

of Philadelphia, make an extensive display of their specialties, which is at once interesting to the trade, and of fine appearance. The special line of this firm is in imitation marbles and woods, and the exhibits show how wonderfully successful they have been in reproducing exact counterparts of Italian, Griotte, Brocatelle, Sarrancolin, Malachite, Spanish, Tennessee, Egyptian and other marbles. In woods they reproduce oak, maple, ebony, birch, Hungariau ash, mahogany, rosewood, tulip, and various Australian woods. A number of mantel pieces with low and high grates and tiled hearths are displayed, as well as parlor registers with facings of the various marbles. Some of these are very beautiful, the enameling and decoration showing perfect skill and art of a high order. Among the marbles we noticed Spanish, n beautiful maroon, dark groundwork with fine veins of white; Plymouth Rock, ebony black with white veins; Lisbon, deep orange with very delicate veining, very brilliant and showy; St. Ann's, dove colored ground, clouded with black, mingled with white veins; Galway green, light green with black clouds and white veins, &c. Some of these are costly, others can be produced at low prices, the value of

WILSON & MILLER, of Philadelphia, also make a fine display similar in character to the above. Some of the exhibits are of great beauty; prominent among these we may mention a Belgian black marble mantel piece, with low grate in nickel and bronze. They also exhibit specimens of all the various marbles, and a small oblong slab of Mexican onyx of great beauty, just purchased by the Meriden Britannia Company.

those exhibited varying from \$15 to \$1000 each.

THOMAS S. DIXON & SONS, Philadelphia, make a splendid display of low grates in various styles. Some of these are elaborately ornamented, and are greatly admired. Chief among these may be noted a gas log fire place, soapstone back, nickel plated front, gilt border, tiled hearth and gilt fender; a low-down grate in nickel plate and gilt, a hexagon grate in nickel and Japan, and a wood fire place with ornamental tiled hearth and fender to match. These are only a portion of their exhibits, and give but a faint idea of the elegance of the display, which is one of the finest in its class.

Manufacture of Dripping Pans by Machinery.

We have already noted that Messrs. Lewis Dalzell & Co., of Pittsburgh, had purchased the franchises of the Dayton Dripping Pan Co., and had begun the manufacture of bread and dripping pans by machinery. All of the sheet iron used in their manufacture is the product of Messrs. Lewis Dalzell & Co.'s works, they having lately erected a very fine 20 inch mili for the special work of cold rolling sheet iron for the manufacture of these pans and for the general trade. This gives them a perfect control of the quality of stock used, and of the gauge of the iron, and secures a uniformity in the material, the advantage of which will be apparent to all interested.

The series of machines used in the manufacture of these pans-the invention of Mr. Foglesong—are very ingenious, and at the same time simple and effective. The iron is first cut into blanks the size necessary to make the pan required, after which it is folded, not pressed, into shape, the action being entirely automatic.

The great advantage of the bending proce over the stamping is too obvious to need much comment. The evils of thin spots, wrinkles, etc., incident to stamping, are done away with, and the edges are simply folded over, leaving them as uniform and smooth as the sheet itself. This leaves no lurking places for the bread or drippings, and makes the labor of keeping the pans clean and sweet very slight. The capacity of the works are two to three

tons a day, but this can be very greatly in-

American Plows in India .- The following remarks on the working of the two plows, says the London Agricultural Gazette, were embodied in a letter recently communicated to the Agri-Horticultural Society at Calcutta:

the Agri-Horticultural Society at Calcutta:

"I am very glad to answer your inquiry," says the writer, "as to our experience of the two plows which have been on trial. Both of them, the English and the American, were easily worked by a pair of ordinary bullocks; each turned up the soil to the depth of six inches, and there was no preceptible difference in the quality of the work turned out. But I imagine that no native farmer would care to own the English (iron) plow, when he could do the same work with the wooden American plow of simpler construction, and with a renewable point to the share. The points rapidly wear down in India, and the plowshare being made in one large piece, the alteration required is expensive. In the American self-sharpener the movable top not only lasts longer but costs little to replace."

The expression of such an opinion by an Amer-

The expression of such an opinion by an American paper might not, perhaps, be of any particular import; but appearing it as does in an English agricultural paper, it may be considered Eron.

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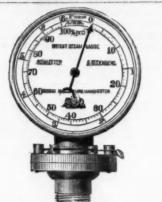
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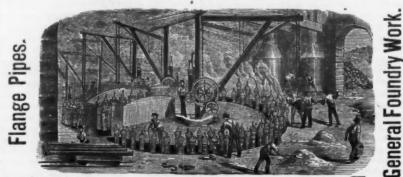
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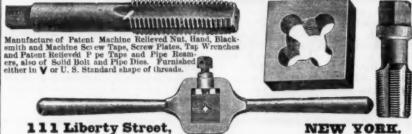
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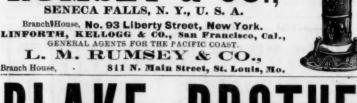
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Paine's Patent U. S. Standard Steel Measuring Tapes,

Pat. Spring Measuring Tapes of Linen and Steel.

FINE TEMPERED STEEL SPRINGS.

FINE TEMPERED STEEL BAND SAWS,
From 1/2 inch wide upward. Warranted tougher toan
any other Band Saw. Catalogues on application.

## WILSON BOHANNAN



PASSENCER CAR LOCKS, BROOKLYN, N. Y. Catalogues and Samples sent upon applicat





Manufacturer of Water, Air, and Vacuum Pumps and Air Compressors. Send for Illustrated Cir-



PRINCES METALLIC PAINT CO.,

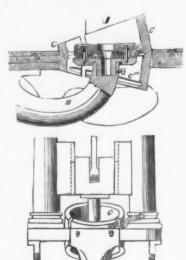
Prince's Metallic Paint and Foundry Facings,

#### New Patents.

We take the following abstract of new patents, recently issued, from the official rec-

STOVE PIPE ELBOW MACHINE.

To John S. Lugg, Springfield, Ohio. - May 16 .-The overlapping edges of stove pipe elbow sections are beaded and joined together.



1. The horn B, supporting the expanding die and the elbow as the sections are successively attached.

2. The sectional clamp with groove C2 C2 ar ranged in relation to one another.

3. In combination, the sectional clamp with groove C2 and sectional expanding dis E, with peripheral convexity E2, for forming the bead, and intermediate space E1, with recess for forming the head on the rivet.

4. In combination, the recessed sectional clamp, ribbed sectional die, and plunger, for expanding the die to form the head and unite the sections of the elbow.

5. The combination of the horn and the sectional die with the sectional clamp and plunger.

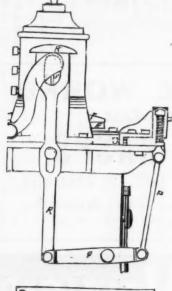
6. The clamp C, having its upper edges beveled to correspond with the angle of the sections of the elbow.

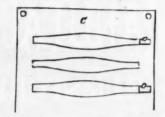
STOVE PIPE-ELBOW BLANK MACHINE.

To John S. Lugg, Springfield, Ohio.-May 16. -A portion of the blanks is punched from a sheet metal strip, which is then passed forward and the remaining strips cut off.

1. In combination, the die plate C and reciprocating punches E, and the shears O O', for cutting a sheet of metal into strips or sections without waste.

2. The combination of the crank shaft and reciprocating punches, and the shear blade O,





rod P, walking beam Q, slotted pitman R R', and pin 8.

3. In combination with a cutter plate C. constructed with a series of openings, as shown, and the head plate F, carrying a series of correspondingly formed punches E, arranged to cut a sheet into sections of the elbow pipe across the entire width of the sheet at one movement of the plunger, acting on the sheet while held in fixed position by a stop on the

eutter plate. 177,323. - Gas Burner. - James M. Clark, Lancaster, Pa.-May 16.

Gas is supplied on opposite sides of an adjustable wick. 177,334.-Hydro-Carbon Stove.-Abner B. Hutch-

ins, Brooklyn, N. Y .- May 16. 177,835 .- Water Cooler .- C. B. Hutchins, Ann

Arbor, Mich.-May 16.

Wooden case is lined with paper; the wooden frame put on to it; the whole is inverted; the stone slabs set into grooves in the frame. The composition is poured in until it covers the bottom slab, when the paper lined wooden

bottom is put on. Cover is filled in same way, the stone slab being screwed on. 1. The combination of an outer wooden case, an inner lining of stone, and intervening layers of paper, and of a non-conducting and water-

tight composition. 2. The non-conducting and water-tight composition, consisting of rosin, tallow or grease, and a powdered or fibrous non-conducting ma-

177,417.-Lamp.-Stephen S. Newton, Bingham

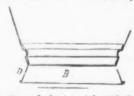
The safety tube is made of wire coiled spi-

ton, N. Y .- May 16.

177,435.—Adjustable Eccentric for Pumps.—

Benj. F. Spry, Hartford, Iowa.—May 16.
The eccentric is slotted from center to rim, and has notched flanges on the sides of the slot, in which notches a pin passing through the shaft engages, controlling the measure of eccentricity to the shaft. The eccentric works in a slotted yoke attached to the pump rod.

COAL SCUTTLE. To A. F. Burnett, Chicago, Ill .- May 23 .- 1. In a coal scuttle, the bottom B, stamped from



a single piece of sheet metal, with flaring and diverging sides, and provided with a hollow bead or wedge

2. The bottom B, in combination with the scuttle A, made with diverging and flaring sides, and the foot D, flaring and diverging in the opposite direction

To Wm. D. Trahern, Rockford, Ill.-May 23. The pump is suspended from the surface

covering, which admits the piston to play vertically in the axis of the pump, thereby obviating any lateral action of the pump rod.

1. The twin air chambers, provided with stuffing box and suitable connection for the reception of the suspension pipe b, water pipe C, and discharge pipe G, cast in one piece.

2. In combination with the air chambers, as described, the water pipes C and E, and pump barrel D. 3. In combination

with the air chambers, as described, the discharge pipe G, with delivery branches n and o, fitted at the junction of the several branches

with a three-way faucet, p, operated by rod r. 4. The suspension pipe b, in combination with the pump base a and stuffing box e by yoke connection, with pump thereto attached, for the purpose of suspending the pump from the surface covering, and to admit the piston rod to play vertically in the axis of the pump to prevent lateral vibration of the suspended

parts. 5. In combination with the pump base s, the adjustable cap k, fitted with guide arm l, fulcrum link m, and lever handle F, for the purpose of adjusting the lever handle to be operated from any convenient position.

FAUCET. To Anton Tomeska, Iowa City, Iowa.-May 23.



wooden body A, wooden spout A', spigot B b, spring b', and nut b'', and metal coverings or hands C C' c C".

177,620.—Cap or Stopper for Can Spouts.— William Collins, Niagara Falls, N. Y .-

The end of the spout is provided with a thimble form cover, having within a flexible pad, the cover being held in place by a spiral spring on a hand rod, pressure against which permits the flow of oil. 177,624.-Stove Covering.-Harvey P. Daggett

and Richard R. Keith, Flint Hill, Mo .-The odors are carried, through openings in

the drum and peforations in the pipe, to the exit flue. 177,634. - Gas Regulator. - John R. Hall, Phila-

The shaft carrying the cam can be operated from the outside, to increase or decrease the tension of the spring which presses the valves

delphia, Pa.-May 23.

177,646.-Hose Hipe Nozzles.-Rufus Kendrick. Wakefield, Mass.-May 23.

The nozzle is intended for insertion in the hole of a partition, so as to put out fire in places impossible to reach by the ordinary nozzle.

177,647. - Water Closet Bowl. - Thomas G. Knight, New York, N. Y .- May 23.

177,673.—Pipe Outter.—Austin C. Wood, Syracuse, N. Y.—May 28.

A hinged sleeve, provided with centering screws, movable independently of the cutter, is adjusted about the pipe. A jointed coller, formed with ratchet teeth and cutter head, is

formed with ratchet teeth and cutter head, is enetriced by a jointed ring, inclosing the teeth, and carrying a pawl. The collar is revolved about the sleeve.

The following design was duly patented in the United States Patent Office:

9289.—Steam Radiator.—George W. Blake, New York, N. Y.—May 16, 1876. Term of patent, 14 years.

The following trade-marks were duly registered in the United States Patent Office:

8693.—Stove.—Greer & King, Dayton, Ohlo.—May 28.

3698.—Stove.—Greer & King, Dayton, Ohio.—May 23.

"word 'Tuscola."
3711.—Hose for Pumps, Engines, &c.—Wannalanset Manufacturing Company, Boston, Mass.—May 23.

"One or more threads or yarn of blue color woven into the fabric of which the hose is composed, and running lengthwise or parallel with the axis of the hose, in connection with the word 'Blue."

### USE THE BEST.



Pawtucket, R. I.

ELIAS G. HELLER. PETER J. HELLER.

HELLER& BAOG

The American File Company have the exclusive right to use the Bernot process for cutting files By this method all the advantages of and cutting are secured, together with an accuracy unattainable in hand work. They are the only manufacturers who empley machinery for testing files and steel.

Goods of all known manufacturers have been repeatedly tested, and interesting tables have been compiled showing the work ing qualities of hics raide by different makers, and of files made from different steels, and with various shapes and angles of tooth They have thus to a want and the manufacture of files to an exactness and perfection with a uniformity of result, as they believe, never before attained No fire, foreign or domestic, that they have even tested, has equalled the performances of their own goods taken at random from their stock. Their machines are capable of the bast delicate adjustment, and can produce the very finest work known to the trade. Special files made to order. Prominent file manufacturers are having their best goods from our works. Price lists and information furnished on application.

AMERICAN FILE CO., Pawtucket, R. I.

#### THE BEST IS THE CHEAPEST.

McCaffrey's Standard American Hand Cut Files and Rasps are warranted to do more work than any other files and rasps in the market.

. ISILVER MEDAL

TRADE MARK.



HAND-CUT. Manufactured by JOHNSON & BRO. No. 1 Commercial Street, Newark, N. J.

GEO. E. HELLER. JOHN J. HELLER.

MM Horse Rasps

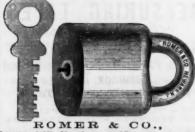
and Files.



Putnam's Government Standard FORGED

Manufactured from the best of NOR WAY Iron, and warranted to give entire satisfaction.

> S. S. PUTNAM & CO., NEPONSET, MASS.



# McCAFFREY & BRO.,

No. 1732, 1734 & 1736 North Fourth St., Phila.

ESTABLISHED 1848.



FILE WORKS. Superior Hand-Cut

MAJE FROM IMPORTED STEEL. **FULLER BROS., Sole Agents.** 

89 Chambers and 71 Reade Streets, N. Y

## Black Diamond File Works.



39, 41 & 43 Richmond St. Phila. G. & H. BARNETT. LINFORTH, RELLOGG & CO.,

Sole Agents for the Pacific Coast, 3 & 5 Front St., San Francisco, Cal. St. Louis, Mo., SEMPLE, BIRGE & CO., Agents. THOS, TAYLOR, 43 Chambers St., N. Y., Agent for N. Y. and N. E. States.

Established 1816.

## Peter

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SOLE AGENTS FOR

Thomas Turner & Co.'s Suffolk Works, SHEFFIELD.

## FILES AND HORSE RASPS.

And Importers of

Z STUBS' FILES, TOOLS & STEEL,

W. J. Davies' Sons' London Emery Cloth, HUBERT'S FRENCH EMERY PAPER.

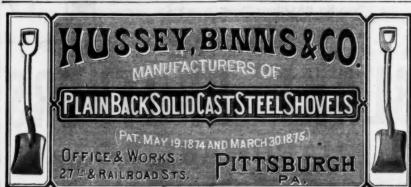
## **ROTHERY'S** Celebrated Hand-Cut FILES,

Made of Best English Cast Steel.

WALSH, COULTER & FLAGLER, Agents, 83 Chambers and 65 Reade Streets, N. Y.

## FILES

187 Tenth Street, Williamsburgh, New



FRANK H. SCUDDER.

## Middleboro' Shovel Co.,

Solid Cast Steel (Antrim) Cast Steel and Iron Shovels, Scoops and Spades.



OFFICE AND SALESROOM, 63 Oliver Street, Boston. WORKS, Middleboro', Mass.

J OLARK WILSON & CO., New York Agents, 81 Beckman Street.

# GOLD MEDAL

PATENTED JULY 25, 1871.

RE-ISSUED MAY 13, 1873. and JUNE 9, 1874.

In this Strap the liability of the leather to stretch and become loose and porous is prevented by the of a patented non-extensible base, which supports the leather and secures

PERMANENT ELASTICITY.

We make this style with single rod, double rod, and wood frames, and intend that it shall, in quality appre layorably with our other well known brands.

BENJAMIN F. BADGER & SON, Manufacturer

Badger Place, Charlestown, Mass,

In var

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## TAUNTON, MASS., Manufacturers of

### COPPER & IRON TACKS, TINNED TACKS,

SUPERIOR SWEDES IRON TACKS. for Upholsterers' Use, Saddlers' Supply, Card Clothing, etc., etc.

American and Swedes Iron Shoe Nails,

Zine and Steel Shoe Nails, Carpet, Brush and Gimp Tacks, Common and Patent Brads. Finishing Nails, Annealed Trunk and Clout Nails, Hob and Hungarian Nails, Copper and Iron Boat Nails, Patent Copper Plated Tacks and Nails,

Fine Two Penny & Three Penny Nails, Channel, Cigar Box & Chair Nails, Leathered Carpet Tacks, Glaziers' Points, Etc. OFFICES AND FACTORIES AT TAUNTON, MASS. WARRHOUSE AT 78 CHAMBERS STREET, N. Y., where may be found a full assortment of Tacks, Brads, &c., for the accommodation of the New York Wholesale and Jobbing Trade.

Any variations from the regular size or shape of the above named goods made from samples, to order.

Machinery Crane Bros. Mfg. Co., CHICAGO.

BEGGS, Agents, 16 Cortlandt Street, New York. St: & 93 Cliff

JOHN CHATILLON

m BALANCE



CLARK & CO.'S

Self-Coiling, Revolving! NOISELESS

## STEEL SHUTTERS

Store Fronts & Rear Windows. FIRE AND BURGLAR PROOF. Also, SELF-COILING

Wood Shutters

In various ginds of wood, suitable for Store Fronts Private Houses, Offices, and School Partitions.

The Best & Cheapest Shut-ters in the World

All keai Estate owners are invited to inspect them at the factory,

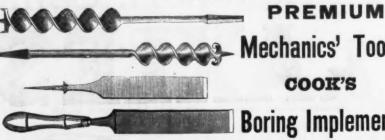
162 & 164 West 27th Street, New York,

And at London, Paris, Vienna, Mel-bourne, &c.

Bull, Ducharme & Co., Buhl, Ducharme & Co., bourne, &c.

New York Warehouse, 62 Reade Street. P. O. Box 2610. FACTORIES, Seymour, Conn.

MANUFACTURERS OF



Mechanics' Tools, COOK'S

**Boring Implements** 

Chisels, Gouges and Drawing Knives of all kinds, Screw Drivers, Screw Driver Bits, Cook's and Douglass Mfg. Co.'s Augers & Bits, Wood and Metal Head Gimlets, Improved Hollow Augers, Blake's Patent Extension Bits,

Boring Machines, Chisel Handles, Wood Boxes, Tool Chests.





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only

#### THE HURRICANE FORGE (PATTERSON'S: PATENT.)

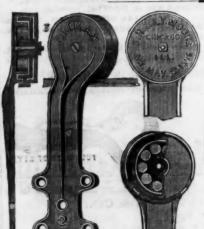
Also Stationary Forges.

Large Size, superior to stone or brick. Can be used with belows or fan. Send for prices and further information to GEORGE PLACE, General Agent, 121 Chambers & 103 Reade Sts., N. Y.

S. H. & E. Y. MOORE, AGENTS FOR

PROVIDENCE TOOL COMPANY, PROVIDENCE, R. I. Threshing Machine Teeth, Cold Pressed Nuts, Chain Links, Ship Chandlery, THE READING BOLT AND NUT WORKS, READING, PA. WM. H. HASKELL & CO., PAWTUCKET, R. I.

FALLS RIVET COMPANY, CUYAHOGA FALLS, O.
Norway Iron Riveta,



"CLIMAX" Barn Door Hangers, Manufactured and for sale by

S. H. & E. Y. MOORE, 68 Lake Street, Chicago, Ill.

The wheel is acted upon directly by the rail. The hub of this wheel revolves within chilled iron roliers. The difference between the diameter of the wheel and the diameter of the hub gives the leverage gained. The hanger has the advantage of this leverage in addition to that obtained from the use of anti-friction roller bearings, and in this respect, as well as in others apparent on examination, is superior to any yet offered to the trade. It requires no ording.

IT COMBINES SIMPLICITY, EASE OF ACTION, STRENGTH, DURABILITY, BEAUTY OF DESIGN.

FOR SALE BY

New York.
Philadelphia.
McCombs, Caruth & Byrnes,
Detroit, Mich.
C. E. Walbridge.
Cieveland, O. McCarthy & Reddield,
Pittsburgh, Pa.
Boston, Mass. F. 8. Bradley & Co.,
Rochester, N. Y.
Springfield, Mass.
Troy, N. Y.
Providence, R. I.

Providence, R. I.

Springfield, Mass.
Troy, N. Y.
And the trade generally. FOR SALE BY

#### BUSINESS ITEMS.

MAINE.

The Kennebec Wire Works, in Hallowell, are located a short distance west of the highway and the railroad. Their factory is 64 feet long, 4 feet wide, and three stories in hight; annealng shop, 80x44 and two stories; blacksmith thop, 20x40 feet. Their machinery is new and of the best approved pattern, driven by two Upham diagonal turbine wheels, 12 and 15 nch severally in diameter, giving a force, under a full head of water, estimated at 55 horse-power. They also have in the building a steam engine of 15 horse-power for They are now giving employment to 13 hands, and turn out over four tons of wire per week. They make a great variety of wire-bright, coppered and tin plated-making a specialty of card-clothing wire, heddles, reeds, &c., for which they have established a high reputation. Their goods are first-class, all of which are manufactured under the personal supervision of their efficient agent, Mr. J. M. Smith, who has had an experience of 20 years. The company is composed of J. W. Stickney, S. Page, H. F. Harding and J. M. NEW YORK.

The Cedar Point Furnace has had a little experience that may be of value to furnace managers. A short time since the furnace began to work badly, and soon a positive scaffold was the result. The gas was immediately turned into the stoves (Whitwell), and the boilers fired with coal. The pyrometer soon showed 1600° F., and the blast was increased to 131/2 pounds. Under such heroic treatment even iron yielded, and the furnace straightened itself out and

Burden, of Troy, is busy on horse shoes. He s endeavoring to make his sales for the year. The past week the horse shoe mill has been idle, putting in a Corliss engine in place of the

The Albany and Rensselaer Mill, at Troy, is busy on steel.

Cedar Point Furnace is in blast and doing well, making about 50 tons No. 1 iron per

The Union Iron Works, at Buffalo, now employ about 300 men in place of 1000 a few years

The Black Rock Mill, Buffalo, is running steadily.

The Premier Furnace, Buffalo, is out, with no prospect of blowing.

The Singer Mfg. Co., of Elizabeth, gave their employes, to the number of 3000 to 4000, a free excursion to the Centennial on Thursday

The Morris County Machine and Iron Co., at Dover, make a specialty of apparatus for the transmission of power by means of wire ropes. This information will be of interest just now, as it is frequently asked by correspondents. The company also manufacture steam engines, mining machinery, iron and brass castings, and forgings of all descriptions.

The mill at Cumberland is running steadily. PENNSYLVANIA.

The Bush Hill Iron Works, Philadelphia, are

uilding a blowing mill for the Pennsylvania steel Works, Harrisburgh.

The firm of Wm. & Harvey Rowland, Philadelphia, are now slitting Norway iron into nail rods, and finishing them about as smooth and straight as rolled rods, having no burr on the edges. Each rod is full to size, so that there is no waste to the consumer. The price for the improved rods has not been advanced.

The Warwick Furnace, at Pottstown, is again n blast, having had to blow out after a short

The Pottstown Furnace is in blast.

The Pottstown Iron Co. have had trouble with their nailers, and are now making efforts to fill up with new men. At present the nail mill is idle, but the other portion of the mills

The only furnaces in blast at Reading are the two Keystone furnaces of Messrs. Bushong. These are sold ahead for a month.

The two furnaces of the East Penn Iron Co.

at Lyons are working.

The Leesport Furnace is out.

The Ringold, St. Clair and both Swedes furaces are in blast.

Atkins has two furnaces in.

The Temple Iron Co. have nearly completed the improvement at their furnace rendered necessary by the fire of a few months since. They have put up a new hoist, new engine, new stock house and raised the stack. They are considering the propriety of blowing in. A

bid has been made for iron, and if successful, they will blow in.

Mr. William Mercer, of Christiana, foundryman, in the employ of Isaac Brodmall & Sons, is the inventor and patentee of an improvement in the turbine water-wheel, which is a very valuable one. Its chief points are a combination of the buckets so as to require less water, less expense for repairs of breakage, and more power furnished, according to size. He proposes to vigorously push the manufacture and sale of his improved wheel.

A new car truck is at present being constructed at the car shops of Messrs. Bilimeyer & Smalls, in York, which is the invention of a Cincinnati, O.
St. Louis, Mo.
Bufialo, N. Y.
Syracuse, N. Y.
Baltimore, Md.
New Haven, Conn.
Albay, N. Y.
Hartford, Conn.
Davion O.
Bufialo, N. Y.
Syracuse, N. Y.
Baltimore, Md.
New Haven, Conn.
Albay, N. Y.
Hartford, Conn.
Bayton O.
Bayton O.
St. Louis, Mo.
Sendls, in York, which is the invention of a gentleman by the name of John M. Brosius.
Each axle under this truck is severed in the center, instead of extending from wheel to center in a box, and are independent of each other, so that in running around a curve each wheel so that in running around a curve each wheel will run the exact length of the track, and thus | building their plate mill.

prevent slipping. This may have been an invention of Mr. Brosius, but it has been invented a score of times before, and, if we mistake not, such axles are in use in Russia at the presen

The Reading Rail Mill have been working during the last month for the T xas Pacific Railroad. This is a part of the 12,000 ton order given by this road, 6000 going East and 6000 West. Atkins Bros., Waterman & Beaver, and Rome, in addition to the Reading, got portions of this order.

Hugh E. Steele, of the Laurel Iron Works, Coatesville, has associated with him Joseph M. Downing and John D. Steele as partners in the marufacture of boiler, flue and tube iron, under the firm name of Hugh E. Steele & Co.

The Sheridan Furnace is making 175 tons per week.

The oldest furnace in Pennsylvania is the old Pennsylvania

Mr. Eckley B. Coxe has just tried the Wootten rocess of using slack, described on another page, with complete success.

At an early hour on Saturday morning last a arge blast furnace at the works of Mr. James Lanigan, a short distance above Norristown, caved in, involving a loss of about \$25,000 The furnace was constructed of sandstone, ome 15 years ago, and has for some time past been considered in an unsafe condition, although being worked daily. On Friday evening Mr. Lanigan notified the workmen to draw off the melted ore. While his men were thus engaged a portion of the front wall gave way, which was followed shortly after by the caving in of the furnace and stack, burying beneath the debris many tons of molten metal. No one was dangerously wounded, one man being slightly injured by a brick when the first crash

The Allentown Iron Company will probably blow out all the furnaces they now have in blast at no distant day. This company have a large stock of pig iron on hand.

The Riddlesburg Furnace has blown out. The mills at Conshohocken are making full

me, and are well supplied with orders. Hoopes & Townsend, Philadelphia, manufacturers of nuts, bolts, etc., are having a good rade at fair prices. This firm is one of the largest manufacturers of these goods in the country, and make as large an assortment.

DOM PEDRO AT THE KEYSTONE PORTABLE FORGE COMPANY'S WORKS. -- On Saturday morning last the Emperor of Brazil paid his first visit to a Philadelphia manufacturing establishment. His early arrival (seven in the morning), and the close personal and critical examination which he made, shows him to be of thorough business habits, and accustomed to rely upon his own judgment. The emperor had seen these forges in various places, and showed his appreciation of them by leaving an order for a line to be shipped to Brazil. As this visit was spontaneous on the part of the royal visitor, it is a distinguished honor to the well deserved merits of a Philadelphia industry. This company has been in existence five years, and they already make shipments of their goods to all parts of the world. They are now engaged filling a large order for the United States government for forges for use in the army and

The firm of J. T. Bailey & Co., Philadelphia, received an order last week for 40 tons of twin from a firm in Dublin, Ireland.

The puddling furnace of Mesars, Noblett & Bro., Tioga Rolling Mills, Germantown Junetion, is now completed, and operations will be commenced immediately.

PITTSBURGH AND VICINITY.

Work is progressing rapidly at the Dunbar Furnace. This furnace, as rebuilt, will be one of the most complete in the country, baving all the latest improvements, including the Whitwell stoves. Mr. Pechin deserves a good deal of credit for his readiness to adopt any new idea that promises to be valuable.

Thos. S. Blair has operated, at his works, on heating cinder with an aikali, and has succeeded in making an iron that has been rolled into sheets. The heaters and rollers, on the 12th, voted

not to work old rails, fagots, or other iron made outside of their mill during the time the puddlers' wages are unsettled. The rollers and heaters, gave Carnegie, Bros.

& Co. notice that they would not work old rails. Messrs. Riter & Connolly, of Pittsburgh, are

erecting the new buildings for the Benwood fron Works, at Wheeling, W. Va. Not more than a third of the mills in Pitts-

burgh have signed the scale demanded by the puddlers.

Messrs. Hussey, Wells & Co., though they agreed to pay the puddlers the price demanded, refused to sign the scale, and their furnaces are cold. Victory is not so ready to perch as was claimed.

INDIANA.

The nail mill at Green Castle is in operation again.

The Wabash Rolling Mill, Terre Haute, are comtemplating building a nail mill.

The Brazil Furnace propose stocking their company, and have filed articles of association with a capital of \$150,000 in 50 shares. They contemplate a rolling mill.

оню.

It is stated that iron was first made in Ohio at Zanesville in 1786 or 1787, by the owners of the Jacob's Creek Furnace.

The Enterprise Mill, Cartwright, McCurdy & Co., Youngstown, have signed the scale.

MICHIGAN.

The Wyandotte Rolling Mill are using the Hay process of purifying iron. They are reFACTORY, Fairhaven, Mass. AMERICAN CO., SALESROOM, 117 Chambers St., N. Y.

1 Bin. Upholstery, Gimp, Brush, Card, Pail and Cheese Box Tacks; Leathered, Tinned and Iron Carnet Tacks; Bright and Blued Finishing Nails; Cigar Box and Chair Nails; Trunk and Clout Nails; Brads, Patent Brads, Copper Tacks and Nails; Iron, Zinc, Steel and Copper Shoe Nails; Polished 2d and 3d Fine Nails; Roofing and Slating Nails; Roofing Tacks, Tinned Tacks and Nails of every variety. Also, Bright and Japanned Lining and Saddle Nails, Tufting Buttons and Nails of any color Any size or style of Tack or Nail made to sample. Orders sent to either Factory or Salesroom will receive prompt attention.



## WORKS,

Wrought Iron Riveted Lattice Railroad

### HIGHWAY BRIDGES.

Wrought Iron

WATER PIPE,

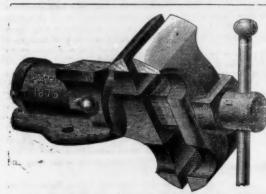
ctured for Water Works, Oil Lines or Gas Maine.

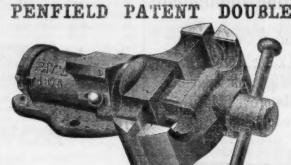
General Riveted Work

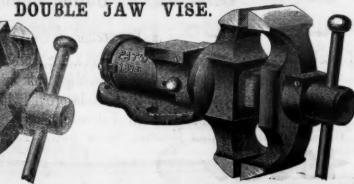
Orders solicited from Civil Engineer and Contractors.

Accompanying engraving represents the Spring field Bridge, built by the Leighton Bridge and Iron Works.]

Bridgeport,







Manufacturers and Jobbers of Hardware, 81 Beekman Street, New York.

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#### New Publications.

PRACTICAL TREATISE ON CONSTRUCTION OF INON HIGHWAY BRIDGES, for the use of town committees, together with a short essay upon the application of the principles of the lever to a ready analysis of the strains upon the more customary forms of beams and trusses. By Alfred P. Boller, A. M., Civil Engineer, member of the American Society of Civil Engineer, 144 pages. John Wiley & Son, 15 Astor Place, New York.

The author has not attempted in this work to give an exhaustive !reatise upon the subject of bridge building, but rather to put the subject in such a form that any one may comprehend the general principles upon which they are constructed. Too many of our highway bridges have been furnished under the direction of jars than any other part of the tubing. committees or town officers who know nothing of the subject themselves, and whose only possible standard for judging was the amount of money which the bridge was to cost when completed. The work is intended to give committees just such information as they ought to possess to enable them to select a bridge and watch its construction intelligently. It will also be of value to engineers not experts in this brauch of the profession, who are called upon to act as inspectors. To give a general idea of its contents we cannot do better than note a few of the subjects as they occur: Factor of safety, loading, fron manufacture, wrought iron, frac ture of iron, testing iron, standard quality, best specimens, cast iron. Then we have bridge nstruction taken up, and the different styles of bridges discussed at some length. The details are explained, and the value of different methods of finishing members explained. One or two of the latter chapters are occupied with the mathematical features of the work.

Taken altogether this is one of the most valuable works of the kind which we have seen. It should be in the hands of all who are in any way interested in the subject.

Van Nostrand's Science Series, No. 22. HIGH MASONRY DAMS. By John B. McMaster, C. E. D. Van Nostrand, 37 Warren street, New York.

This is a little treatise upon the profile of masonry dams. The author says of it: "We can hope to add but little that is really new, but shall endeavor, by drawing from many sources, to supply our own deficiency, to diminish the errors of others, and thus obtain results very much more accurate than could be desired if we relied solely upon ourselves." The author seems to have put together in a small compass a good many of the formulas most commonly used in connection with this subject, in such form as to be available for reference.

Van Nostrand's Science Series, No. 23. THE FATIGUE OF METALS UNDER REPEATED STRAINS. With Various Tables of the Results of Experiments. From the German of Prof. Ludwig Spangenburg, with a Preface by S. H. Shreve, A. M. D. Van Nostrand, 27 Warren street, New York.

This is a valuable and timely contribution to our literature upon this subject. The experiments are of great value, and are of interest to all who wish to study the character of metals when exposed to strains. It is unfortunate that the translator has not given the weights and dimensions in English pounds and inches. Certain other points in the work lead us to regret that the translator had not bestowed a little more time and labor upon his work. These things do not seriously impair the value of the little volume.

#### Centennial Notes.

W. C. ALLISON & CO.,

Philadelphia. This firm has one of the largest exhibits in Machinery Hall, occupying a space 33x28. With such heavy material as they use. and such articles as they produce, it is difficult to make a display of much attraction to the general visitor. They have, however, so arranged their exhibits that the display is both artistic and attractive, beside being of a very useful character, and to the trade deeply inter-

The space is surrounded by a railing of iron tubes, and at the rear is found a pyramid of tubing, galvanized and black and steel boiler tubing, in diameter of from 11/4 to 10 inches exhibit is placed a very fine picture of the building, and in order to illustrate that department, they have photographs of the various cars, both complete and in process of building. The photographs are of large size, 38 in number, and beside serving as illustrations of the business, in connection with the picture of the works, make a very handsome appearance.

On two sides of the space they have exhibits

in a permanent position. Another invention by the same party is the patent socket or pipe coupling.

The advantages of the improvement may be

are presented, the vanishing screw preventing the formation of such an incision.

Third. The socket adds to the strength of the ubes, where the joint occurs; whereas, in the old mode, the socket afforded no protection against the fracture of the tube.

In this connection, it may be observed that the end of the tube may be screwed so far into the socket that the end of the latter will project beyond the end of the vanishing and tapering thread of the screw, and this projecting end of the socket adds to the strength of the joint, which is, in fact, more secure and more proof against the evil effects of tremors and

The use of the tapering and vanishing thread also enables the pipe to be screwed into the socket until it becomes jammed tightly therein, which is another advantage possessed over the ordinary method of coupling, the shrupt shoulder in the latter preventing the joint from being further tightened after the pipe has been screwed into the socket to that point.

For this reason, Mr. Allison's joint is invariably a tight one, no matter how often it may be taken apart and screwed up again, the ordinary joint on the contrary wearing looser each time it is unscrewed.

The best proof of the advantages of this joint, however, is the result of the tests to which it has been subjected.

A tube with the improved socket separated outside the latter when subjected to a tensile strain of 65,000 pounds to the square inch, while a similar tube, with a standard socket, yielded, under a strain of 37,000 pounds per square inch, the threads of the socket being stripped. socket until it becomes jammed tightly therein,

The threads of both socket and tubes remain

The threads of both socket and tubes remain perfect, no matter how often the tubes may be screwed and unscrewed. This was determined by the following test:

A tube was screwed as tight as possible into the socket, and then unscrewed, and after this operation was repeated 160 times, it was found that the threads remained perfect. The same severe test was applied to the standard socket, and on screwing the tube tight for the tenth time the socket turst.

To test the transverse strain, two pieces of

To test the transverse strain, two pieces of To test the transverse strain, two pieces of tubing were connected together with a patent socket, and a weight of 4600 pounds was suspended from the latter; the tube was, of course, bent, but after the weight was removed the tube resisted an internal hydraulic pressure of 2000 pounds per square inch; whereas, on two tubes, with the standard socket, being subjected to a weight of 3300 pounds, under like circumstances, they broke off close to the socket—that is, at the point we have referred to above, where the nucleus of a fracture must always exist when the ordinary socket is used. These results of careful tests have been derived from the best authority, and they are so

always exist when the ordinary socket is used. These results of careful tests have been derived from the best authority, and they are so satisfactory that the invention has attracted the attention of bridge builders, by whom the tubes coupled, in accordance with Mr. Allison's invention, have been extensively used in place of the usual solid tie bolts.

Mr. Allison's pipe joint has been most highly commended, especially by those who have used it in the oil regions, where the great depth to which these pipes are carried renders it imperatively necessary that the joint shall be sound and air-tight.

There is also another invention by Mr. Ira C. Hoskins, an employe of the exhibitors, which is said to be very useful and very ingenious. It is used for gauging sheet metal, and we understand its special merits are generally admitted and appreciated.

Another prominent feature of the exhibit is the Doty revolving scraper, for which W. C. Allison & Co. are the Philadelphia agents. This scruper is so well known, and its merits so generally conceded, that no detailed description is usees saily. We understand that upward of 25,000 of these scrapers are in use in the United States and Carada, and that the demand is constantly increasing.

#### The Nail Interest at Wheeling.

A correspondent writing to us from Wheeling, W. Va., under date of June 24th, says:

We have been watching with a good deal of pleasure the course business has taken since be organization of the Western Nail Association; and to the credit of the members and friends of that organization be it said that they have kept the faith," and are now reaping their reward in the shape of better prices and fair orders, although some of the mills have considerable stock. For that reason there is a strong disposition manifested to shut down for a month or six weeks. They are determined to reduce the production of nails to the wants of the trade, and think that it will have a tendency to strengthen prices. There is a growing diseach. Immediately fronting the entrance to the position among the boilers operating here to demand of the mills the usual advance works of the firm at Thirty-second and Walnut over Pittsburgh price of boiling, viz., 25 cents. streets, which embrace an area of 13% acres, of The injustice of this demand is manifest from which 734 acres are under cover. A large por the fact that, some time ago, the boilers gave tion of the business of the firm is in car the different mills a written notice that they would not be governed in any way by the price paid at Pittsburgh, and that they intended to cut loose from the time honored custom. The action of the boilers at that time was considered quite liberal, and they continued to be paid at the \$5 rate when boilers in Pittsburgh were only getting \$4.50 to \$4.75 per ton. It is not thought probable that any serious consequences will result from this demand, and hones are enwill result from this demand, and hopes are en-tertained that it will not be practicable at the

On two sides of the space they have exhibits of bolts, nuts, rivets, sockets, wood acrews, car forgings and heavy forgings for bridges and buildings. These are arranged on pyramids 16 feet high, each pyramid being surmounted with an American eagle. One of the most striking features in the exhibit is in the arranging and grouping of the various articles so as to form a series of beautiful figures, and the taste shown throughout is certainly deserving of the highest praise.

One of their specialities is a car brake, invented and patented by the senior partner of the firm, and also exhibited here. It is hung to the spring plank and not to the bolster (as in ordinary brakes), thus keeping the brake shoes in a permanent position. Another invention by the same party is the patent socket or nine. personal supervision the improvements are being made. He is probably the youngest and most experienced man in the business.

The Benwood people are pushing the work on their new mill and expect to be running by September.

The advantages of the improvement may be enumerated and described as follows:

First. There is a perfect metallic contact throughout between the socket and the tube, every portion of the thread of one fitting the thread of another; hence, a more perfect and secure joint is made than by the old mode of secure joint is made than by the old mode of secure in all parts of the country. The Iron Age can all parts of the country. The Iron Age can mail parts of the country. Second. No abrupt shoulder, and no incision do a great deal toward the consummation of forming a nucleus for a fracture of the tube,

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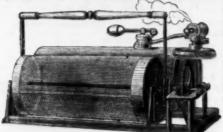


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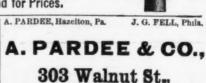
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New Zealand	5 04			63	12
Brazil			4	08	20

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City subscribers will confer a favor upon the Publisher cy reporting at this office any delinquency on he part of carriers in delivering The Iron Age; also, the loss of any papers for which the carriers are responsible. Our carriers are instructed to celiver papers only to persons authorized to receive them, and not to throw them in hall ways or upon status; and it is our desire and intention to enforce this rule in every instance.

#### CONTENTS.

First Page.—Schlenker's Automatic Revolving Die Bolt Cutter with Nut Tapping Combination. On the Hot Blast, with an Explanation of its Mode of Action in Iron Furnaces of Different Capacities.

Third Page.—An Improved Chimney Top. "Certennial Chimne," Engineering History of the Country.—The Officers of Machinery Hall, Centennial Exhibition.

"Cectennial Chimea," Engineering History of the Country. The Officers of Machinery Hall, Centennial Exhibition.

Fifth Page.—Stoves, &c., at the Centennial. Manufacture of Dripping Pans by Machinery. American Plows In India.

Seventh Page.—Now Patents.

Ninth Page.—Now Publications. Centennial Note. The Nail Interest at Wheeling.

Fourteenth Page.—Now Publications. Centennial Note. The Nail Interest at Wheeling.

Fourteenth Page.—Now Hall The "No Compromise" Resolution of the Stove Manufacturers. Dr. Wurtz's Great Chemical Discovery. The 'Stuation of Copper. The American Institute of Mining Engineers. The Arrowsic fron Mines.

Fifteenth Page.—On the Hot Blast, with an Explanation of its Mode of Action in Iron Furnaces of Different Capacities—(Concluded).

Sixteenth Page.—The Utilization of Anthracite Coal.

Seventeenth Page.—Trade Report—(Concluded).

Our English Letter.

Nineteenth Page.—Trade Report—(Concluded).

Twentieth Page.—Hardware at the Centennial—(Concluded). South American Trade. A Romance of the Signal Service Bureau.

Twenty-seventh Page.—The Iron Age Directory.

Thirtieth Page.—New York Wholesale Prices

Thirtieth Page.—New York Wholesale Prices Hardware and Metals.

Thirty-first Page.—New York Wholesale Prices of Concluded

-(Concluded).

Thirty-fifth Page,—Philadelphia, Buffalo, Cin-unati, Pittaburgh and Detroit Hardware and Metal Thirty-seventh Page.—Chicago, Boston, and t. Louis Hardware and Metal Prices.

#### The "No Compromise" Resolution of the Stove Manufacturers.

A correspondent in the stove trade writes

us as follows : MOUNT HOLLT, N. J., June 19, 1876.

To the Editor of The Iron Age—Dean SIR:
In your issue of the 22d inst. the doings and
sayings of the National Association of Stove
Founders are very fully reported, and much Founders are very fully reported, and much stress is laid upon, and some comments favorable to, the resolution so unanimously adopted, that hereafter "no compromise" shall be the motto in their dealings with their unfortunate debtors, but that, like Shylock, the pound of flesh shall be insisted upon, and the only shiboleth that will pass them back into the fold shall be 100 cents to the dollar. Now permit an humble retail dealer to suggest that the greatest pert of total failures in the stove trade throughout the country is due to the class of salesmen sent out by the manufacturers. They are for the most part inexperienced young men, are for the most part inexperienced young men, with no other ambition than to sell large bills, matter who the customer may be, or what business responsibility is, nor whether he illenter into a ruinous business competition no matter who the ensumer may his business responsibility is, nor whether he will enter into a ruinous business competition with an old established and reliable firm. If he will only buy, the order is quickly taken and sent forward for "just a sample, you know," say, two or three of each size; one or two "Retrospective Light" Gas Burners and just "Retrospective Light Gas Burners and just Back Action Combination

a few "Double Back Action Commander Ranges," with hot water reservoir and warming closet attachments.

The irresponsible dealer is now on an equal footing with his well-to do neighbor, whose stock must be paid for, or the inevitable drait stock must be paid for, or the inevitable draft comes along, only to force payment or dishonor paper. The stock must now be sold, and it is offered at such orders as precludes the possibility of competition by the old firm. The goods are soon all gone, but there is no money left to pay with, for the expense account has devoured the lion's share. The manufacturer has lost his goods, the well-to-do dealer has lost

salesmen who are posted in the trade, and instruct them to take orders only from reliable parties, or those who can give good security. Then, and not until then, will the honest retail dealer be enabled to zell his goods at a fair profit, and be prepared to pay 100 cents to the dollar and no compromise. dollar and no compromis

Respectfully, There is a ring of sound good sense in what our correspondent says, which should commend itself to the consideration of the stove manufacturers. Regarding the "no 'compromise" resolution from the stand point of an honest and solvent tradesman, who naturally feels a sympathy with and for his less fortunate neighbors, it seems to him that the manufacturers have adopted rather a hard policy, especially as their salesmen often persuade tradesmen against their judgment to take goods they do not really want, and which, having them, they cannot dispose of. In their anxiety to sell, the travelers often scan credits very carelessly, and not infrequently misrepresent, or report upon very slight and unsatisfactory testimony that those to whom they are selling can be safely given the usual four months' time. Easy credits always tempt young and inexperienced tradesmen to launch out beyond the limits of safety in the hope of making a fortunate strike, and when this policy is encouraged by travelers, whose only thought is to sell as many stoves as possible, it may seem at first glance a little hard to hold those who cannot pay their notes at maturity to so strict an account as is promised in the "no compromise" resolution of the manufac turers. We understand this to be the view taken of their action by our correspondent, who probably reflects the sentiments of a great many dealers.

It will be obvious, however, upon closer examination, that the manufacturers have been compelled to adopt this "no compro-"mise" policy in self-defense. During the past few years they have suffered heavily at the hands of dealers who have failed for profit. It has only been necessary to threaten to go into bankruptcy to induce creditors to accede to very easy terms, and there are thousands of trades men throughout the country to-day who have purchased the goods they are selling at from 15 to 60 per cent. of the prices they agreed to pay for them. During, and for about a year after the panic, manufacturers dealt very leniently with delinquent debtors, and there can be no question that many tradesmen took unfair advantage of this disposition to effect dishonest settlements. The instances of fraud and duplicity mentioned by stove manufacturers in the discussion of the resolution to which our correspondent refers, were well calculated to excite surprise, and the object of the "no compromise" policy is simply to protect the manufacturer against a class of irresponsible and dishonest dealers who have abused their confidence and defrauded them out of large sums which would have been paid had the debtors been given the choice between payment or bankruptcy. This is a measure of protection which the manufacturer not only owes to himself but to his customers who buy on four months' credit and pay 100 cents on the dollar, and who cannot compete with a neighbor who gets his goods at half price and saves from his dishonest settlement enough capital to enable him to replenish for cash and get the benefit of the 5 per cent. discount.

Without calling in question the sincerity of the "no compromise" resolution, we can say with confidence that the honest. unfortunate debtor, whose inability to meet his notes arises from causes beyond his control, has no more reason now than before to feel that he has hard creditors to deal with. It was understood and specified that the resolution did not apply to debtors who, from other causes than bad management or over-trading, are unable to pay in full. "Where shall we draw the "line at which leniency shall cease?" asked one manufacturer. "That," answered another, "must be left to the good "sense of the manufacturer to determine." and the answer expressed the sentiment of the meeting. All the resolution means is that there shall hereafter be no compromise with men who are able to pay, or with those whose inability results from causes against which foresight and good manage ment could have guarded. It is only by the weeding out of those who cannot do business successfully, that success is possible for any one in business. The dealer who cannot meet his notes must "step down and out," and unless he can show good reason for his inability to pay his debts, he has no right to expect anything less than a demand for the surrender of the assets upon which his credit was based. The stove manufacturers "mean business," and by enforcing the rule they have adopted they will do much to raise the standard of honesty in the trade, and make failures less frequent than they have been of late. As our correspondent suggests,

than a large trade and a proportionate ac- one having the diameter 22, and the other cumulation of bad debts and losses.

#### Dr. Wurtz's Great Chemical Discovery.

Chemistry is most truly an inductive science. Ever since the day when Priestly discovered oxygen, a century ago, its disciples have been carefully collecting facts from which to deduce laws and build a general theory of chemistry. One by one combination by weight. Long after that the law of combination by volume appeared, and made quite a revolution in our formulas, a reform not yet introduced into all our schools, still less into practical

Chemistry has well been defined as physical laws to the molecules is becom- visitors, but such work as that by Dr. ivg more and more general. From a study of the specific heat of gases, Ampere deduced the important law that "equal vol-'umes of all gases contain the same num "ber of molecule"." This gave us some idea of the size of molecules in a gaseous

head of "Atomic Volumes."

specific gravity be taken at the point of sold ahead. incipient ice fusion instead of the boiling gives us 19,683=273.

As oxygen is never seen in a solid or liquid state, it is necessary to calculate its volume from some liquid in which it occurs. Kopp took water at 100° C., and found its molecular volume to be  $18 \div 0.9579$ =1818, and subtracting the volume of 2 molecules of hydrogen at 5.5 each, he

Dr. Wurtz obtained the molecular volume of oxygen by comparing the volume of water with that of peroxide of hydrogen, and ascribing the difference to oxygen. In this way he obtained for oxygen the molecular volume 5184=3×123, and every other element, but especially hy- cess affoat. drogen, do change. But the atomic volumes, both of elements and compound radicals, always change from one perfect cube to another. Hence he deduces his first law, which may be stated as follows: "The volumes of all single chemical molecules, whether of elements or of radicals, except oxygen, are expressed by quantities having the relation of even cubes of 'a series of whole numbers, that of ice being 27."

long array of figures to sustain it, this sim- So far as statistics can show, there was, ple test for compound radicals will settle the question of writing most of our rational formulas in organic chemistry. Perhaps we should mention that Dr. Wurtz discards, or rather upsets, the whole theory of types, and throws out all of our alcoholic radicals, as shown by his alcohol formulas:

Methyl Alcohol.... Ethyl

He is obliged to double, or quintuple, many formulas in inorganic chemistry; thus, Ho, Clo for H Cl; His Os for H, O; H10 O10 for H2 O2; A82 Cle for As Cla; Na, Cl, for Na Cl. Thus in hydrochloric acid the molecular volume is 28,516, and subtracting the known volume of chlorine 243=13,824, leaves hydrogen 14,692. As this corresponds to no perfect cube, he supposes there are two molecules of hydrogen present, one having the volume 243=13,824 the other 253=15,625. In chlo-

has lost his consomers, and no one seems to have benefited by the original order save the genteel young man whose salary has been raised because he is so successful in placing orders.

Let the wholesale dealers send out reliable

23, while the chlorine is 24, making the series 22, 28, 24.

His third law, which he calls Oratesis, states that this tendency to vary in diameter increases with the basicity or electropositive nature of the element; so that while oxygen varies the least, or not at all, hydrogen and the metals vary most.

We cannot, of course, venture any judgment of our own on the merits and value these laws have become apparent, and of Dr. Wurtz's theory, but it has met with great minds have formulated them. One a most favorable reception by chemists, of the first and most important was that of and is by them regarded as an important contribution to our knowledge of the theory of the constitution of matter. That a discovery so great should have been made by an American chemist and laid before the world at this time, is peculiarly gratifying. The progress of scientific investigation and research in this country is molecular physics, and the application of a matter of surprise to intelligent foreign Wurtz will place our chemists alongside the greatest names of the Old World, even in the estimation of Europeans.

#### The Situation of Copper.

The American copper market has weak-In 1855 Hermann Kopp took up the study ened considerably of late, not withstanding of the size of the molecules in liquids and the unusually large shipments of that solids. Starting with the hypothesis that metal to Europe, and the still larger quanthe volume of a molecule could be repre- titles engaged to follow in the same direcsented by the quotient resulting from di- tion during the remainder of the year. viding its atomic weight by its specific The fact is that activity in brass manufacgravity, referred to water, he determined ture in the United States has not come up the molecular volume of a great variety of to expectations, and there is no prospect substances. His results will be found in of a revival. Manufacturers of copper Watts' Dictionary of Chemistry, under the and brass are known to have very light stocks, however, and any sudden resolu-Quite recently Dr. Henry Wurtz, of tion on their part to replenish would find Hoboken, took up the study of these mo- the market in a position favorable to holdlecular volumes, and found that if the ers, the new copper arriving being mostly

In Europe, on the contrary, up to quite points, many of them would become, on recently, the tendency has been rather an being multiplied by 1000, perfect cubes of upward one, for various reasons, which whole numbers. Let us take, for example, we shall endeavor to explain upon an exwater, which has, in a fluid state, the amination of the latest statistics at hand. density 1; and its equivalent, 18 divided by Leaving out the 1475 tons affoat for Eu-1, equals 18, which is not a perfect cube. rope from Australia, advised by mail, and The density of ice is about 0.9145, which the 2500 tons affoat and chartered from divided into 18 and multiplied by 1000, Chili, advised by cable, we find the following:

VISIBLE SUPPLY OF COPPER IN EUROPE. 1876. 1875. 1874. May 1. May 1. May 1. Tons. Tons. Tons. 
 Stock at Liverpool and Swansea, Chili bars.
 9,643
 12,965
 20,258

 Stock at London, English and Australian.
 7,904
 7,695
 7,619

 Stock at Havre, Chili bars, &c.
 4,888
 2,466
 2,775
 found for oxygen in water the molecular Chili chartered and affoat, by mail 10,819 7,037 6,830 82,154 80,163 86,997 Price of Chili bars.....£79. 10/ £83. £74.

From the foregoing it will be seen that the actual stock of Chili bars has run unaccording to his calculations, this never usually low at Liverpool and Swansea, but changes, while the atomic volumes of the deficiency is compensated by the ex-

Both the stock and the amount on the way was, however, held by strong parties, and as the smelters had run rather short in their available supply of West Coast and other copper, the London importers up to the present month of June have been enabled to uphold rather stiff figures. The advance thus gradually brought about was further sustained by the general statistical position of copper. The import was some 4000 tons less, while the de-If this be true, and Dr. Wurtz brings a liveries have fallen behind about as much. consequently, nothing of an exciting na ture at hand, the demand for manufactured copper being quite slack. It was understood, however, that for war purposes a great deal of copper has been absorbed this year, and a large part of the amount afloat from the West Coast goes direct into the hands of the French military authorities.

> Considering the dullness in the European metal trade, it must be confessed that copper has done remarkably well, which was mainly due to this uninterrupted government demand. When the year opened, it was apprehended that any weakness that might be inherent in the copper situation would be found and developed in Europe, and that the metal was safe enough here.

> During the current month of June, Chili bars, as well as best selected, have been London market, in anticipation of the

#### tive policy pays better in the long run we have in argentic chloride, two of silver, The American Institute of Mining Engineers.

We can honestly congratulate the American Institute of Mining Engineers upon the events of the past two weeks in which it has taken part. It has had a memorable meeting, which has done much to give it a position of equality with the greatest scientific societies of the world. The large attendance of members, the number and eminence of the invited guests, the interest and permanent value of the papers read before it, the pleasant character of its conversaziones, and last, though by no means least, the election of Hon. Abraham S. Hewitt to its presidency for the ensuing year, are all matters for honest and hearty congratulation. In the choice of its presiding officers the Institute has been especially fortunate. No one better fitted for the work of organization and for the recruiting of members could have been found than its first president, the genial and accomplished Prof. R. W. Raymond; none could have given it more influence among metallurgists and mechanical engineers than Mr. A. L. Holley; and no man in the country is more worthy of the position as head of our leading scientific metallurgical society than Mr. Hewitt, whose ripe wisdom, large experience, high position as iron-master and practical statesman, and fine oratorical powers, combine to fit him in a peculiar degree for the office to which he has been chosen. For all these things, as well as its rapid growth, present strength and the excellent character of its membership, we heartily congratulate the Institute.

We also congratulate the members and our readers upon the very valuable essay of Mr. Isaac Lowthian Bell, M. P., read before the Institute on Tuesday last, and published in full on another page of this issue. Mr. Bell's paper is a valuable contribution to the literature of the blast furnace, to which he has made so many valuable additions. We do not need to invite for Mr. Bell's paper a careful perusal; that it is certain to have. Finally, we congratulate our readers upon finding Mr. Bell's paper in The Iron Age, in advance of its publication elsewhere.

The National Board of Trade, now in ession in this city, is a body of much importance, as representing in many respects the great productive and distributive industries of the country. It has the power at this time to exercise an important influence for good in shaping and directing public opinion on many subjects of national interest upon which Congress seems to be hopelessly at sea. That it will fully improve this opportunity is, we think, doubtful. Judging from the results of previous sessions, we fear that a very large part of the session will be taken up in profitless talk, that the resolutions will be too numerous and diffuse, and that by attempting too much they will end by accomplishing nothing. A few questions of national interest, such as the bankrupt law, the regulation by Congress of commercial intercourse between States, and the currency, are large enough to occupy all the time any representative body of merchants can devote to making speeches, and listening to them. The preparation of a long programme, providing for the consideration of everything "on the earth be-"neath, and in the waters under the earth," we regard as a mistake. No board in session for less than three or four months, could possibly do justice to such a programme as has been prepared for the nal Board of Trade, an be surprised if its deliberations fail to attract more than passing notice from the people, and still less from Congress. Nearly all conventions make the same mistake, and for this reason very few of them have had appreciable influence in shaping public opinion.

The Arrowsic Iron Mines .- The Boston ournal of Commerce says: These mines are situated in Arrowsic, Me., directly opposite the city of Bath. The property consists of two mines, called respectively the Stinson and McKenney mines. In a geological survey of the mines, a few years since, Dr. A. A. Hayes says of the ore : " The pure ore is the magnetic oxide of iron, and connected with garnets. manganese, rock and hornblende, with black mica-minerals usually found with the softer magnetic from ores. Much of the fron ore found at the pit mouth contains twenty-nine per cent. of metallic iron in the ore, and eleven gradually yielding some £2 or £3 in the to thirteen per cent. as yield in the blast furnace. This, it should be remembered, is the London market, in anticipation of the wallaroo auction sale, but the same thing having happened two months ago, when a rebound soon followed, the market on the other side may soon right again.

Our own market has shown increased weakuess lately from dullness in trade, and it remains to be seen whether some disignates them.

His second law, which he calls Engymmetry, states that the molecules which combine to form a new substance tend to assume very nearly the same size, hence [Continued from page 1.]

metal as nearly as possible to the same heat as the cinder, it was intercepted in a cavity scooped out in the channel for the purpose. The iron thus treated resembled almost exactly in quality that being smelted by the furnace where the experiment was tried. In the matter of mere temperature, therefore, I think we may assume the quality of the pig as a fair index of the temperature of the hearth of any furnace, whether it be blown with hot or with cold air. It was, moreover, early remarked by manufacturers and others, that the economy in fuel effected by the use of hot air varied considerably with different ores smelted by its aid. With Scotch blackband the saving was not less than 30 cwts, of coke per ton of iron manufactured, whereas in Wales it did not much exceed one-third of this quantity, and again in France, furnaces were instanced where the change in quantity of combustible used after heating the blast was scarcely appreciable. Now, it is difficult to understand, if the readier fusion of iron in a hot blast furnace was productive of the great measure of economy in Scotland, why it should be almost entirely moperative in France. It has been my wish to explain that the establishment of a certain position of equilibrium in the furnace is productive of economy, because by it the reduction of the ore, and consequent generation of carbonic acid, is confined more or less to a zone where the heat does not permit this gas to be affected by the presence of carbon. If this be conceded, then it is clear that, if one ore part with its oxygen more readily than another, a furnace working the less refractory might have its desired position of equilibrium materially disturbed by the substitution of one requiring a much larger time for its reduction. That different ores of iron do differ in susceptibility to experiment, in which the specimens were simultaneously exposed to a current of carbonic oxide at a temperature of 41° C. (77° F.), during a period of six hours, is shown by the following compari-

Unrossted specular ore of Elba lost of its oxygen 18.1 per cent. A specimen of roasted Spathose ore, 41.9.

A specimen of Cieveland stone, 50.6. A specimen of unroasted Lancashire hems

These figures point irresistibly to the conclusion that a furnace just large enough for working satisfactorily with Lancashire ore, would have its condition materially affected for the worse by giving it the more refractory iron-stone of North Yorkshire to melt. We shall see hereafter that the red hematite can be advantageously smelted in a smaller furnace than happens with the colltic stone of Cleveland. It must be also kept in view that, as reduction proceeds very slowly at low temperatures, it is essential that sufficient time should be afforded for this operation, before the ore reaches a depth in the furnace where carbon is dissolved by carbonic acid. The figures below show how rapidly reduction is impeded by a lowering of the temperature at which it is carried on, Cleveland calcined stone being, in all cases,

the ore employed: 

hot blast furnace th evils already referred to were mitigated but not entirely removed. The gases, at their es-cape at a high temperature, and the reduction of carbonic acid back to the state of carbonic oxide, were still the source of considerable waste of fuel. The blast itself, from some prejudice in the minds of furnace managers, was also rarely, if ever, heated to a proper temperature.

perature.

About 20 years ago the Cleveland ironmasters in the North of England raised the
temperature of their blast to about 485° C. (905°
F.) with considerable advantage in the matter
of coke, and ten years later the large dimensions of Messrs. Bolckow & Vaughan's furnace were added to considerably by other manfractures, two at the Clarence Works being 80
feet in hight, with boshes of 20 feet, and a capacity of nearly 161,000 cubic feet. The saving
in fuel from these two alterations may be apreset in hight, with boshes of 20 feet, and a capacity of nearly 161,000 cubic feet. The saving in fuel from these two alterations may be approximately stated as 8 or 9 cwts., of which two-thirds was due to the enlargement of size. These highly satisfactory results inspired some makers with what, at the time, I regarded as rather extravagant ideas of what might be accomplished in the direction just named. One set of gentlemen was found recommending the use of blast heated to a couple of thousand degrees Fah., and others urged the adoption of furnaces containing 70,000 or 80,000 cubic feet, while a third did not hesitate to advocate the expediency of uniting this intense temperature in the heating stoves with enormous dimensions in the furnace, by which it was expected a ton of iron might be smelted from Cleveland ironstone with 13 or 14 cwts. of cok. The substitution of fire brick for iron in the hot air apparstus tended to encourage these hopes, inamuch as the comparative indestructibility of the material employed offered, it was considered, no hindrance to heating the blast even beyond the temperature already named.

Furnaces at the same time were erected having, in one case, a hight of 103 feet and a capacities are attained, he regulated by reactions of a chemical nature in their upper regions or not, we must look, I would submit, to the science of chemistry If we wish for further enlightenment, before introducing changes in a plant involving the outlay of enormous sums of money.

In directing attention to an examination of the natural laws which govern the actions of an agent like carbonic oxide, or an iron ore, I will be as brief and as free from scientific detail as possible. In the course of experiments, already referred to, it was proved that the existence of the circumstant in the furnaces of a course of these remarks that course of these remarks that course of the cleveland hills manifest deviated by the course of these remarks that course of the cleveland in the course of the course of these remarks

of coke, would tend to reduce the heat of the heath of a hot blast furnace to that of one blown with cold air. I maintain, however, that the grade of metal produced is of itself an unmistakable indication of the temperature at which the iron was melted, and which from its intensity it is difficult otherwise to measure. It is well known the higher numbers of pig iron required during their manufacture a more intense heat than the lower; I was therefore led to conclude that if the lowest, i. e. white iron, were exposed to a temperature sufficiently elevated to produce gray metal, a corresponding alteration in its quality would follow. A bar of white pig was in consequence plunged into the current of cinder flowing from a furnace making to the total of the loast of the blast must be raised progressively to a much higher point as the quantity of fuel and alteration in its quality would follow. A bar of white pig was in consequence plunged into the current of cinder flowing from a furnace making to the constitution of the fuel consumed there is a corresponding diminution in the quantity of air required, so that to carry the same amount of heat into the furnace represented by the 100°, the blast must be raised progressively to a much higher point as the quantity of fuel and alteration in its quality would follow. A bar of white pig was in consequence plunged into the current of cinder flowing from a furnace making to the use of intensely heated air, that we were justified in assigning to every additional 100° to the blast the same saving as that effected by any other 100° which preceded it. This is manifestly an error, because with each step in the diminution of the fuel consumed there is a corresponding diminution in the quantity of air required, so that to carry the same amount of heat into the furnace represented by the 100°, the blast must be raised promoted in the use of intensely heated air, that we were justified in assigning to every additional 100° to the blast the same saving as that effected by any other 10 seven or eight years ago. It has been stated white pig was in consequence plunged into the current of cinder flowing from a furnace making No. 3 iron, the effect of which was to fuse the iron at a temperature closely resembling that required for the production of gray metal. After flowing gown the runner so as to bring the melted of cole. Notwithstanding the duruble nature delivered into the furnace at a temperature of something like 1300° or 1400° C. (2372° or 2552° F.) to enable us to obtain it with 15 cwts. of coke. Notwithstanding the durable nature of the fire brick stove, it is questionable whether, unless with an enormous plant, blast of this temperature could be supplied with regularity and constantly, owing to the slowness, compared with iron, with which this material communicates its heat to a current of air. I am not aware whether the impracticability of conferring such a temperature as that just named upon the blast, or what the circumstances are which have led to the abandonment of the hope of obtaining a ton of iron with three-quarters of a ton of coke or less, but 18 cwts., or thereabouts, is still confidently predicted as being the future consumption of fuel in the North of England, by one or two gentlemen. In confirmation of this doctrine, hmited periods of working have been given, showing what I regard as an exceptionally favorable state of things. It is necessary, however, in the presence of practical men to dwell on the unsatisfactory character of the results of a single week, where there are so many disturbing elements familiar to any one with any knowledge of a blast furnace. That which can be done for one week ought to be capable of indefinite repetition, and until this is accomplished I prefer seeking for an explanation of those causes which appear to me to present a barrier in reducing the weight of fuel required in the blast furnace of the North of England. From what has preceded, economy in this respect has to be achieved, it is pretended, by extraordinary dimensions of the furnace, and by a substitution of heat in the zone of reduction, because by it there must prevail a constancy of temperature, from the reasons already explained in connection with this part of the process, to whatever hight the furnace is carried. We shall therefore regard the temperature of the escaping gases as are determined to the beneficial action, but by a current of heated vap shall therefore regard the temperature of the escaping gases as are determined not by chemical action, but by a current of heated vapors meeting another of solid cool matter, and view the question as one ascertained by actual experience and observation. The cooling power of the solid matter on the gases ought, in such a case as that supposed, to be influenced by the time in which the two classes of substances remain in contact with each other. The following sets of figures, exhibiting the quantities of solid and gaseous substances passing through furnaces of four different sizes, will give an idea of the opportunity offered by each to intercept the heat contained in the gases, and so returning it for useful purposes to the hearth:

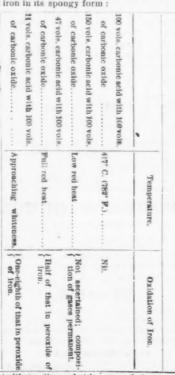
These quanti-Cuts, of materials descending and cubic meters of gas 0.0 C and 460 with each 1000 min. 32 F. and 30 min. B ascending per minute. 

The mean temperature of the gases leaving the furnace of 6000 c. feet may be taken at 650° C. (842° F.), whereas from that of 12,000 c. feet, they were about 120° C. (216° F.) below this. We should be quite prepared for learning that, although the furnace starting third in this list is 33 per cent. larger than its immediate predeis 33 per cent larger than its immediate predecessor, its gases should, nevertheless, escape at the same temperature, because the ratable work performed is almost precisely the same in each case. When, however, we come to the last one, with a capacity of 26,000 c. feet, and only doing 70 per cent of the duty of the previous two, and are informed that no further cooling at the escape pipe is accomplished, we are constrained to admit that furnaces of 12,000 c. feet have done all that can be effected in the direction in question. I may add that since these calculations were made, other furnaces having a cubic content of 22,500 feet have been set to work with precisely the same results, and when work with precisely the same results, and when it is stated that the observations upon which the estimates are based, extend over several years upon no less than 18 furnaces, it must be years upon no less than 18 furnaces, it must be allowed ample opportunity has been enjoyed to test their correctness. It may be observed, before leaving this subject, that on the assumpbefore leaving this subject, that on the assumption of the gases being cooled by simple heat abstraction, as has been claimed, from 830° C. (626° F.) to about 165° C. (629° F.) the heat thus intercepted is represented by about 1 cwt. of coke burnt or oxidized, as happens in a blast furnace in the Middlesborough district. This, therefore, would be the amount of economy capable of being realized by such a change, were it possible. Of course, such an extent of cooling as that named is quite conceivable if the materials charged contained an unusual quantity of water, but my remarks contemplate the existence of no such cause of disturbance. Whether the constancy of temperature in the vaporized substances which leave our furnaces after certain capacities are attained, be regulated by reactions of a chemical nature in their upper regions or not, we must look, I would submit, to the science of chemistry if we wish for further enlightenment, before introducing changes in a plant involving the outlay of enormous sums of money.

that condition to have a stream of gas in which one half of the column of carbonic oxide had stone used contributed..... one half of the column of carbonic oxide had already been converted into carbonic acid. Reduction would go on until the peroxide of the ore lost one-third of its oxygen, and was brought to the state of protoxide, when further action ceases. Again, instead of an ore of iron let a specimen be taken in which the iron had een perfectly reduced to its metallic condition. on treating this precisely as was the oxide, we will find it robs of oxygen the carbonic acid of the mixed gases, and this continues until the iron has become converted into protoxide. Equal volumes, therefore, of carbonic oxide and carbonic acid and protoxide of iron, at a full red heat present an example of state. and carbonic acid and protoxide of iron, at a full red heat, present an example of static equilibrium, which is incapable of disturbance. [To enable metallic iron to split up or decompose carbonic acid a higher temperature is necessary than that at which carbonic oxide is enabled to reduce the ore]. Two hundred degrees C. (392° F.) has been eited as that required for the last named reaction in the case of Cleveland ironstone, but to enable carbonic acid to recxidize the reduced metal, a temperature of 400° C. (752° F.) is necessary.

We thus perceive that while the heat prevailing in the upper region of a furnace suffices for

We thus perceive that while the heat prevailing in the upper region of a furnace suffices for reduction, it is incapable of producing reoxidation. There are times in a blast furnace two antagonistic forces at work, carbonic oxide tending to reduce the ore, and the resulting carbonic acid tending to reoxidize the newly formed metal or, what is the same thing, preventing its formation. The annexed table shows how these forces hold each other in check at different temperatures when passed over the control of the c at different temperatures when passed over me tallic iron in its spongy form



Notwithstanding what has preceded, it must not be inferred that peroxide of iron is incapable of completely converting carbonic oxide into carbonic acid, but then the iron oxide must be in large excess; in other words, this gas is only capable of removing the very small portion of the oxygen in the ore. As a natural consequence to this state of things, we might expect each successive portion of oxygen which

form of carbonic acid gas.

To maintain the equilibrium supposed, in which, in the form of carbonic oxide, there must be double the quantity of carbon, we have which must be added the carbon dissolved

in the pig iron.....

19.02 Leaving the fuel to supply the remainder.

ity. It contributed so much heat to the general fund, and it virtually increased the beneficial capacity of the furnace. When, however, the latter is ample in size, affording the gases sufficient time to accomplish their work with a minimum of loss, then the heat of the blast does its ratable share of the work and no more.

It may not be devoid of interest to consider shortly what ought to be the consumption of coke in an 80 foot furnace of, say, 15,000 cubic feet, blown with cold air, adopting as a standard of comparison the performance of a similar furnace receiving its blast at 485° C. (905° F.) Assuming the coke to be oxidized to the same extent in both cases, it is clear we must supply the heat furnished by the hot blast

to the same extent in both cases, it is clear we must supply the heat furnished by the hot blast by heat to be obtained by burning an additional quantity of fuel in the lurnace itself.

This addition, however, will be burned only to the state of carbonic oxide, the ore having furnished all the oxygen capable of raising this gas to the condition of carbonic acid. Making proper allowance for ash and for the greater amount of heat which will be carried away in a larger volume of escaping gases, it will be found that about 6 cwts. of coke per ton of iron would be needed to make up the deficit. Thence a furnace using 22 cwts. per ton with a blast heated to 485° C. (905° F.) would consume about 28 cwts when the air is employed at atmospheric temperature, a rate of consumption which accords with metual experience. This affords an additional proof, if such be necessary, that heat perature, a rate of consumption which accords with actual experience. This affords an additional proof, if such be necessary, that heat contained in the blast differs in no way from that evolved by the coke. Before leaving the subject of the oxidation of the furnace gases, it must be remembered that the preceding remarks are applicable only to a furnace kept regularly filled. If this be neglected, a loss of fuel may be the result, notwithstanding that carbonic acid increases largely in quantity. The effect of this is manifested in a rise of sensible heat in the gases themselves, which accounts at once for the prejudicial effect well known to furnace managers on work performed counts at once for the prejudicial effect well known to furnace managers on work performed under such circumstances. If then, as experience has demonstrated, no benefit in the matter of coke has been derived from increasing the size of our furnaces in Clevelard beyond a hight of 80 feet, with a capacity, say, of 15,000 cubic feet, let us consider whether any advantages in respect to the weight of production has accompanied the more recent additions of size.

This question has been indirectly alluded to when speaking of the relative quantity of solids and gases passing through furnaces of different dimensions, but for our present purpose I will quote the actual make of fron from furnaces of the four dimensions already quoted:

into carbonic acid, but then the iron oxide must be in large excess; in other words, this gas only capable of removing the very small portion of the oxygen in the core. As a main standing of the relative quantity of the oxygen in the core. As a main oxygen which is removed from an ore to leave its associated iron with itercased slowness. Accordingly, 1 found that the loss of the gas at the lower tembers of the found of the control of the control of the core. The facts and figures have functed prove, first, that temperature promotes the reducing power of early the control of sentral action vary with the temperature. It is a control of sentral action vary with the temperature. With the more apparent than that we ought to be able to determine experimentally whether the gase as they leave a blast furnace, from their compares of the control of the contro

changes which accompany the smelting of iron, and the difficulty of examining with the necessary precision each step in the process, it is not surprising that some doubt should, on the question before us, still linger in the minds of some who have upheld the value of super-

heating the air contained in the blast furnace.
With such conflict of opinion there is
no alternative but to examine with the requino alternative but to examine with the requisite care the results of actual experience. A large quantity, as much as 2,000,000 tons, I understand, of pig is annually made with superheated air, and certainly so far as its application to the furnaces of the North of England is tion to the furnaces of the North of England is concerned, there has been obtained as favorable results in furnaces of 22,500, with blast at about 485° C. (900° F.), as have been commanded by other manufacturers in furnaces one-half larger, and blown with air fully 200° C. (360° F.) higher than that in use in smaller furnaces. Reference in an earlier part of this paper was made to the greater facility with which the red hematite of Lancashire suffered reduction when compared with the ore of Cleveland, the difference being stated at 7 to 5. This hematite was treated in furnaces 55 feet high, in which a ton of pig from was smelted with an equal weight of coke, or thereabouts. When the iron-masters of the West of England learnt that an advantage had When the irron-masters of the West of Sigland learnt that an advantage had followed the use of large furnaces and of super-heated air on the east coast, one of their number was soon found following so encouraging an example. The susting the large in the Largean example. This costly change in the Lanca-shire plant has been unproductive of any benefit, an example. This costly change in the Lancashire plant has been unproductive of any benefit, for the simple reason that with an ore so susceptible of reduction as that in use in that district the position of static equilibrium, already explained, is secured in funaces of smaller capacity than happens when the mines furnishing the more refractory ore of Cleveland are the source of supply. It is needless, however, to quote the experience of English iron-masters to an assemblage containing within its ranks names of great eminence in the American fron rade. In no country are there more striking instances of different character of ores than in the United States, and every one who has studied the question is fully aware that large quantities of iron are run from Individual furnaces of very moderate size. These are blown with air of no extraordinary temperature. The consumption of fuel at the same time does not exceed that in the lofty furnaces of the North of England. This is so peculiarly the case when iron ceed that in the lofty turnaces of the North of England. This is so peculiarly the case when iron is produced by means of charcoal, that I avail my-self of the present opportunity to recommend the action of these furnaces as a subject of special study to those who have the time and opportu-nity to devote to this interesting subject. There are actually to be found instances in dif-ferent American localities where furnaces 40 to 42 feet high, with bushes of 914 feet and there-42 feet high, with boshes of 9½ feet, and therefore containing not above 1500 cubic feet, are running 250 tons of the richest gray iron in a week. This extraordinary production for such a capacity is achieved with the blast at 370° C. (700° F.), no benefit accruing from raising it to

are sufficiently large to afford the reducing gas ample time to expend its energy on the work it has to perform. Precisely in the same way as a small cold blast furnace of 6000 cubic feet has its activity promoted by heating its air to 600° F., so a large one—say, of 8000 cubic feet—may have its blast advantageously raised from 900° to 1200° F. What I maintain is, that dimensions of furnace and temperature of blast are convertible terms until we arrive at a certain composition of the gases. This composition infers so much carbon (one-third, I have assumed) burnt to carbonic acid, two-thirds as are sufficiently large to afford the reducing gas sumed) burnt to carbonic acid, two-thirds as carbonic oxide, and carbon thus burnt means a given quantity of heat. The heat required for smelting iron varying in amount with different kinds of ores, the extent to which that afforded by the combustion of the fuel has to be supplemented by the heat contained in the blast, also varies. In illustration of this, low furnaces of 10,000 cuber feet, in England, are found doing the same work in point of consumption of coke as others of 15,000, but in the former case the blast requires to be elevated to 700°C. (1293°F.), whereas 450°C. (896°F.) suffices in the latter. This experience of the old world seems to be confirmed by that of the new, for we are informed very recently, that the furnace sumed) burnt to carbonic acid, two-thirds as we are informed very recently, that the furnace at Fort Henry has been running 300 tons a week, burning a trifle under 23 cwts. of anthracite coal, with air at 1350° F. to 1400° F. Almost precisely the same results are being obtained at Glendon, with its blast heated in iron stoves at a very moderate temperature, the fuel being also anthracite, and the ore treated, I believe, not less refractory than the rich product of the Lake Champlain mines. The furnace at Glendon, however, contains close on 12,000 cubic feet, and is almost exactly one-half larger than that at Port Henry. A word or two of explore don, however, contains close on 12,000 cubic feet, and is almost exactly one-half larger than that at Port Henry. A word or two of explanation, before I conclude, as to what is supposed to become of the additional heat received from superheated air by a furnace sufficiently large not to require its aid. We have already seen what happens when the dimensions are below that required for the economical treatment of an ore. In it the oxide of iron reaches a zone of the furnace where the high temperatuenables the carbonic acid produced by the reduction to dissolve carbon without the evolution of heat. Let us imagine the case of a furnace sufficiently large to have reached the limit which, on theoretical grounds, I have assumed as the true one. In it let us further suppose that the blast is exactly raised to the temperature which enables it to supply the heat in deficit after the fuel has been oxidized to the extent described. If in such a case a large amount of heat is conferred upon the blast, as can be done with the fire-brick slove, the zone of high temperature commences protanto to extend itself toward the throat of the furnace where it meets with unreduced oxide of iron. Such a mode of procedure is clearly equivalent to letting the iron stone descend to the region of high temperature before it is perfectly reduced; in both cases heat is wasted by the inburning, as I have termed it, of carbonic acid.

In closing these remarks on the theory of the bot blast and on its action. I may state that

a higher temperature, and yet in some cases a ton of metal is said to be obtained for even less than an equal weight of charcoal.

The opinion just set forth on the expediency of heating air beyond a certain point, are only applicable to furnaces where the dimensions are sufficiently large to afford the reducing case.

heat is wested by the inburning, as I have termed it, of carbonic acid.

Iu closing these remarks on the theory of the hot blast and on its action, I may state that the views I have endeavored to explain to my brother iron-masters on this side of the Atlantic are founded on experimental labors and investigations having for their object the solution of a purely practical question. My firm was among the first who proposed following up the idea of my late friend, John Vaughan, which we did by the adoption of dimensions nearly one-third larger than those he had attempted, to which was supplied blast at a temperature beyond that he could at that time command. The results indicated some improvements by this change of condition, and it, therefore, became absolutely necessary for our own guidance in the future to learn whether any further addition to the capacity of the furnace or to the temperature of the blast would present any advantage in the economy of fuel. rurtuer addition to the capacity of the furnace to ro to the temperature of the blast would present any advantage in the economy of fuel. When, with the Cleveland ironstone, the furnace has reached, at the very outside, 15,000 cubic feet, and has its blast heated to 485° C. (905° F.), I answer this in the negative. If the opinions thus formed embrace any fallacy, they at least possess the recommendation of constituting those upon which I have recommended those associated with me to act. As such it affords me much plessure in submitting them to the criticisms of my associates in the Institute of Mining Engineers of this great country, an institution which has distinguished me by adding my name to its small het of honorary members, and from which I received so many proofs of most friendly welcome upon the occasion of my former visit.

Philadelphia, June 21, 1876.

The Utilization of Anthracite Slack by Wootten's System.

At the meeting of the American Institute of Mining Engineers, on Tuesday, June 20th, in Philadelphia, Mr. F. B. Gowen, president of the Philadelphia and Reading Railroad, made the shaft without any water passing through it some interesting remarks on the subject of the for over four months, the greater part of this old utilization of anthracite slack, which did not reach us in time for insertion in our last issue. We give below an abstract of Mr. Gowen's re-

marks: It is well known that the wants of the coal market require that anthracite be broken into different sizes. The result is a large production of fine waste or culm. This gathers in large piles around the mouth of pits. In the district with which I am connected, the culm already accumulated amounts to probably 40, 000,000 tons. This waste, notwithstanding some admixture of slate, contains as much carbon as most merchantable coal, and some times more. Several attempts have been made to introduce into this country the Belgiam system, which requires artificial mixture and pressure. But the cost of this process, which is about \$1 per ton, has precluded its use, except for dome tic purposes. The attention of our companies was called some months since to a process for utilizing this culm that demanded neither mixture nor pressure. This process, the invention of Mr. Wootten, superintendent of the Reading Railroad, has already been used suc cessfully in stationary and locomotive engines. and he is now preparing to make it successful on steamships.

As stated, the process requires neither mixture nor pressure. The culm is shoveled into the fire and burned by the aid of a blast. In stationary engines the ash pit is entirely closed, except a small hole in the bottom sufficient to admit the pipe conveying the blast. The grate, instead of being of bars, as usual, is of perforated sheet fron. The blast is created by a small jet of steam, which is admitted through a pipe into another pipe about 20 times its diameter and shaped like the frustra of cones, apex to apex. The vacuum created by the steam escaping into this pipe causes an enormous draft of air. The pipe leading to the orifice is closed by a valve, held in place by a spring in such a way that the pressure of steam closes the valve, and so regulates the supply. The strength of the spring is regulated to a certain steam pressure, say 100 lbs. When the pressure has reached this point the supply of steam to the blast is shut off and the fire is less fierce. On the reduction of the pressure the spring relaxes, and the blast acts again. There is also a valve that covers the mouth of the orifice leading into the fire box, which also works automatically closing the orifice when the blast is not work ing, and so preventing a waste of either volume or pressure of blast. Generally two or three blasts are used under the fire box of an engine.

Its trial on a locomotive proved an equal suc cess. The fire box was arranged as above, but it is evident that if the ordinary exhaust of the locomotive was used for the blast, it would be so strong as to carry the fuel up and out of the smoke stack, as well as being too frregular. The use of the exhaust is practically abandoned. and a blast is produced under the ash pan by a jet, in a way that will be explained. In order to utilize the heat of the waste steam it is taken through a series of pipes which act as a condenser of a steam engine. The water from the tender passes through or around these pipes, and the water is heated About one-third of the steam is condensed. The belance passes out by a pipe up to the top of the stack, but finding no escape, it passes by a 6 inch pipe down and through an annular ring, and back under the ash-pan, where it is used as a blast in the manner before stated. The next experiment will be made on steamers.

Mr. Gowen suggested that experiments be made with this blast and slack in the smelting, puddling and heating of iron. In regard to its conomic results, Mr. Gowen stated that one pound of culm from ordinary coal, and of the ordinary run of waste, evaporated 81/4 pounds of water-within about a pound of the result obtained from the same amount of best coal. Culm taken from a bank at the mouth of a pit that had been idle for 40 years, pounds of water for one pound of the fuel.

The applications of this are for engineers but it seems to me that this great amount of fuel, now a waste, within 90 miles of a seaport town, and worth not over 10 to 20 cents a ton, is worthy of attention.

#### The Formation of Authracite Coal.

We find the following in the Shenaudoah

We have before us now on our table a speci men which is one-half anthracite coal and the other half a solidified sediment that four years ago was all soft sediment. For over four years there has been in use in the Indian Ridge shaft of the Philadelphia Coal and Iron Company, this district, a wooden pipe, about six luches in diameter, made of inch boards nailed together, which served to carry water from one of the rings in the shaft to the lower level. The rings are boxes around the sides of the shafts which eatch the water coming out of the rock, slate, or coal, and are put in to prevent the water from falling down and making a regular shower bath of the shaft. At the rink in question a large spring in the slate, about thirty feet below the primrose vein, had been struck, the water from which is apparently as pure as

crystal. Some four months since it was found that this wooden pipe had become so clogged with the reddish brown sediment that is deposited by all mine water, that the open space in it was not more than two inches in diameter, and not more than two inches in diameter, and not more than two inches in diameter, from the control of the canadas and Great Britain, understands book-keeping, is a good correspondent, and not afraid of work. Unexceptional references.

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ring. Consequently a new pipe was put in, and the old one, nearly closed with the sediment adhering to its sides, was left standing. The water was then turned into the new pipe and pipe was taken out, and when broken open the wonderful phenomenon presented itself that the sediment was gradually changing into what appeared to be anthracite coal. About a half inch of the inside of the sediment lining the pipe had changed into coal, and the remainder was also gradually changing, the only portions of the sediment remaining quite soft, being that part deposited first and next the sides of the pipe. A cross section of the pipe now shows, commencing at the center, first a circle of coal of about half an inch in diameter surrounding the two-inch opening remaining in the pipe, then a circle of sediment partly turned into coal, and then the sediment in its natural state and the sides of the pipe. The surface of sediment which was exposed to the action of the atmosphere has changed first, and the influence or chemical combination which had changed its nature were gradually operating on the rest of the sediment. The process of formation is plainly seen in the sediment next that already turned into coal.

Samples of coal taken from the pipe have been tried on the blacksmith fire at the colliery. and it makes an exceedingly hot fire, but being of a softer nature than the natural anthracite it clinkers badly. Fortunately there are any quantity of samples of this wonderful formation, and those who are unwilling to believe without themselves seeing and touching, can be accommodated. There is no Keely motor business about this discovery. A section of the pipe about 16 feet long has been left standing in the shaft, to see what results will follow in the next six months or year. Samples have also been sent to Gen. Pleasants, at Pottsville, for examination, and we suppose the public will soon have the opinion of gentlemen quali fied to judge on this surprising formation; but if anthracite coal will form from sediment deposited by mine water when exposed to the ac tion of the atmosphere under certain condi tions for a period as short as four months, what becomes of all the pet theories of the geolo gists and mining engineers on the subject? How about the great heat, the millions of years of time, and tremendous pressure which, ac cording to the various theories of the heretofore accepted authorities, were necessary to account for our deposits of the finest and best fuel yet found?

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WANTED situation as foreman in a mechanical cale establishment, by a man 28 years of age, is a college graduate, has served a three years apprenticeship at machinists trade, and for past two years has been a-sistant draughtsman in water works construction. References as to ability and character. Address, F. M. C., P. O. Box 368, Rochester, N. Y.

#### Special Notices.

### ROOFS.

Save time and money by sending for estimate for new or old buildings. Send for our 100 page Book (pree if you write to-day), and learn how to stop leaks effectually and cheaply, save re-shingling, etc. Correspondence invited. S Cedar St., N. Y., or 49 S. Front St., Phila. Mention The Iron Age.

#### JUST ISSUED.

EVERYTHING
Seeds, Implements, Machinery, and Fertilizers.
New Catalogue, 200 Illustrations, mailed on receipt 10 cent stamp.

FARM. A. B. COHU. 197 WATER ST., N. Y

#### Important to Manufacturers. BISSELL, WELLES & MILLET, Auctioneers and Commission Merchants, No.

Solicit from Manufacturers and o.hers consignments of Hardware and Cutlery for our weekly Auction Sales to the Trade, or at private sale for cash, as desired. Our facilities for moving large lines of goods are unsurpassed. Advances made if desired.

#### Wanted,

A Foreman who has had practical experience in the construction of Architectural Iron Work; must understand draughting and figuring quantities. A per manent situation for a good steady

H. W. BELDIN. Address 195 Reed St., Milwaukee, Wis., giving terms and referen

#### Wanted.

A man to keep a set of books and clerk in hardware store, or would sell a half or whole of stock. None but a practical hardware man need apply, and the best of reference must be given.

S. L. McKISSON, Des Moines, Iouea

WANTED.—A first-class business man familiar with machinery and manufacturing, capable of handling large bodies of men, desires a responsible position. References satisfactory. Address, IRON AND STEEL,

#### Care of P. O. Box 813, Bridgeport, Conn. DROP FORGINGS.

The TRENTON VISE & TOOL WORKS, Trenton, N. J., having increased their facilities, are now able to do all kinds of

Iron and Steel Drop Forgings in quantities to order at reasonable rates. HERMANN BOKER & CO., Proprietors

101 & 103 Duane St., N. Y S. B. LOWE,

Chattanooga, Tenn.

Dealer in METALS AND ORES. Special rates of freight to all principal points in the United States and Canadas.

### TO LET,

Possession Immediately.

HERMANN BOKER & CO., 101 Duane Street. N. Y.

#### **MANUFACTURERS**

desirous of introducing their goods to the British and Continental Markets, are advised to insert advertisements in the newspaper "IRON," published every Saturday, at 99 Cannon Street, London, E. C.

Scalz; First 3 lines, 3/; every additional line, 10d. Price, 6d. per Copy, or 30/ per annum, inclusive of postage to the United States.

## Steel Castings.

Solid and Homogeneous. Guaranteed tensile st 25 tons to square inch. An invaluable substitute pensive forginga, or for Cast Iron requiring strength. Send for circular and price list to CHESTER STEEL CASTINGS CO. Evelina St., Philadelphia, Pa

#### Wanted—A Partner.

In a foundry and machine business, already well es tablished. Locality splendid and healthy. A practical man with means is wanted to join practical man who is already well established CAR WHEEL FOUNDRY, P. O. Box 134, Selma, Alabama.

#### Briesen's Patent Agency FOR SECURING INVENTIONS, TRADE

MARKS, &c., IN AMERICA AND EUROPE, No. 258 Broadway, New York.

A. V. BRIESEN. A FTER SEVERAL YEARS OF SUCCESSFUL experience in the construction of

New and Experimental Machinery, we desire to invite the attention of manufacturers and others wanting that class of work, to our facili ties at Peekskill, N. Y., near the Hudson River

Railroad depot, 1h. 20m. from N. Y. City. ANDERSON BROTHERS.

### for Sale, &c.

#### HARDWARE BUSINESS For Sale.

In the city of Norwich, Conn., an old stand facing two streets. Rents low. Good help and doing a prosporous business. Large back country. The best of reasons given for selling. Address, FULLER & PARISH, Norwich, Conn.

#### FOR SALE.

An % inch mill train for making Merchant, Band and Hoop Iron. Will be sold cheap. Apply to W. W. JONES,

Near the Lehigh Valley Railroad Depot, Allentown, Pa.

#### for Sale.

#### Magnetic Iron Ore For Sale.

1000 tons; contains about 60 per cent. iron; is suitable for making Bessemer steel; makes a fibrous iron; mill cinder may be worked with it to advan-Erie. Apply J. M. MACHAR,

Kingston, Ontario, Canada.

See specimens from Machar Mine at Centennial.

#### For Sale Low. Wire Straightener and Cutter.

This machine is nearly new, having been used but a few times. Connected with it is a machine for making hair pins. The whole will be sold for less than half its cost. Apply to or address Watson & Kelso,

46 & 45 N. Front St., Philadelphia.

#### FOR SALE, at Taunton, Mass.

The Steam Engine Works known as the Foundry and Machine Co., consisting of all the Real Estate, Machinery, Tools and Patterns necessary for building Corliss Steam Engines, from 10 inch to 34 inch cylin-der; also a full stock of Tools and Machinery for general lob work. This process der; also a full steek of Tools and Machinery for general job work. This property will be sold extremely low, either for the Machinery, Tools and Patterns to be removed, or the entire property. The city of Taunton offers superior advantages as a location for any kind of machine business, having a navagable river for receiving coal and iron. Two lines of railroad connected by steamers between New York and Boston; superior Western connection by railroad, and a large and intelligent manufacturing population. For further particulars or catalogue of machinery address

GEORGE A. FIELD, Taunton, Mass.
Or J. M. LEONARD, Somerset, Mass.

### Screw Factory For Sale.

By order of the Bondholders of the International Screw Nail Company, of New York City, there will be sold at Public Auction, Thursday, July 27th, 1876, at 10.30 o'clock, a. m., on the premises recently occupied by the said company, located in the so-called Bay State Village, in the town of Northampton, Mass., the following property to wit.: All that tract of land containing about twelve acres, formerly owned and occupied by the said International Screw Nail Company, together with the buildings thereon consisting of a brick mill 150x40 ft., three stories high and basement, and six dwelling houses: water privilege of about 60 horse-power, steam boiler and piping for heating the mill, and also the full equipent appertaining to said screw factory for the production of 1500 gross of screws per day, vis.: Headers, Shavers and Nickers, Threaders, Patterns, Shafting, Belting, Machine Tools, Office Furniture, Fixtures, Patent Rights, &c., &c. For catalogues, apply to

W. T. CLEMENT, Esq., Northampton, Mass.

#### Hardware Store For Sale,

A Har lware Store near Boston. Satisfactory rea-ons given for selling. For particulars address HARDWARE, P. O. Box No. 995, Boston, Mass.

PATENT FOR SALE.

A Light, Handsome Office.

The Swiss Industrial Co., of Neuhausen, Switzerland, have invented an apparatus for heating and ventilating Rl. Rd. Passenger Care, and offer their patent, dated May 36, 1876, For Sale.

Mr. A. W. MANNEL, 88 Prince Street, N. Y.

#### FOR SALE.

TESTING MACHINE, built by the Son.a Boston Iron Co., arranged for tensile and compressive strains, capacity 150 tons.

MILLING MACHINE, built by Brainard Milling Machine Co., cutters swing 28 inches diameter, and spindle set at right angles, which improve accurate work.

insures, and spinute set at right angres, which insures accurate work

IRON ROOF, that covered New England Iron Co.'s Mill, 8 arches 80 feet span, posts 18 feet high, building now 80 feet wide by 90 feet long.

ROLLING TARBLES, for straightening Iron.

PUDDILE TRAIN, for Billets and 3, 4 and 6 inch Berry.

inch Bars.
FIVE DRILLS.
CORRUGATING MACHINE, Complete.
CORRUGATED SHEET IRON and barbed SMALL UPRIGHT ENGINE, 15 H. P.,

PUMPS, Etc. Apply to WM. E. COFFIN & CO., 8 Oliver Street, Boston.

### Valuable Furnace Property and Mineral Lands FOR SALE.

The assignees of McKnight, Porter & Co. will offer at Public Sale, at Monticello Furnace, Cowanshannock Station, Allegheny Valley Railroad, On Wednesday, July 19, 1876, at 10 o'clock A. M., that valuable property known as the

MONTICELLO PURNACE, MONTIUELLU VUIENAUB,
consisting of about three hundred acres of land, on
which is erected a blast furnace, with all necessary
buildings. Coal and ore banks contiguous.

Also about one thousand acres or valuable land,
underlaid with coal, iron ore and limestone. This
land is on opposite side of river from furnace.

The furnace has been in blast within six months,
and everything is in order for issmediate operation.

For any further information, address, EDWIN MILES and JOHN W. WILEY.

Assignees, Pittsburgh, Pa., who will forward circular giving detailed description of property. E. MILES, J. W. WILEY, Assignees.



### FOR SALE.

at 18c. a copy, Weekly Spanish Review and Prices Current. The undersigned is also a Translator from ann into the English, Spanish, French and German. Latest Translations made: for the governments of Germany and Spain, Pacific Mail S. S. Co., Waltor A. Wood; Morris, Wheeler & Co.; Todd & Rafferty; John T. Dunkin; Fisk & Hatch; R. W. Wilde; Wilson Sewing Machine Co.; J. Hess & Co.; H. Marquardt; M. Echeverria & Co., and Chas. E. Little, New York; Hocking Valley Mig. Co.; W. F. Potts, Son & Co., Phila; Atlantic and Pacific Land Co.; B. E. Flemming, Jersey City; Wilder & Co., Savannah, and the Tanite Co.; Stroudsburg ("Emery Grinder"), Abendroth & Root Mig. Co., to whom he refers.

EF Estimates furnished of translations and setting up of Spanish, German and French Catalogues for the Centennial. C. KIRCHHOFF,

Metal Reporter of " The Iron Age," Box 3091, New York P. 0,

## Trade Report.

Office of THE IRON AGE. WEDNESDAY EVENING, June 28, 1876.

The past week has been one of more than ordinary duliness in the financial markets. partly because of the dullness in all departments of business, and partly because of the extreme heat, which has driven from the city a large number of the free lances of Wall street, who amuse themselves, and at the same time make a living, by raising a disturbance whenever opportunity offers. Money continues abundant and easy for borrowers on call at 1 @ 2 per cent. The discount rate on prime mercantile paper is 31/4 @ 5 per cent. Under the influence of the Treasury interest disbursements, gold declined to 111%. Foreign exchange has been strong, the rate on prime bankers' bills being 4.90 @ 4.901%.

The decline in the value of silver in London to 78 cents per oz. of coin standard makes the proposed silver dollar worth only \$4\forall cents, gold, while the smaller silver collage is worth only 79\forall cents to the dollar. Fractional currency, on the other hand, is worth 89\forall cents to the dollar. This shows the fallacy of all arguments in favor of making silver a standard of value. The redemption of paper currency worth 89\forall cents, gold, in subsidiary silver coin worth only 79\forall cents is very like a farce. This backward progress will be a long time leading us back to the point of resumption upon a gold basis. We give below the daily range of the gold premium since our last report: The decline in the value of silver in London

since our last report :		
-	Highest,	Lowest
Thursday	1123/	112%
Friday		112
Saturday		111%
Monday		112
Tuceday		1113
Wednesday		112
Government bonds	are in good	demand and

Government bonds are in good demand and strong, notwithstanding the decline in gold. State bonds are dull, but prices are fairly maintained. Railway mortgages are strong, especially those of the Wisconsin roads. We give below the quotations of government bonds at the close of business to-day.

The stock market has been heavy. The railroad war has not yet reached a truce, and will probably continue some weeks longer. The principal speculation has been in Lake Shore, Western Union, Northwestern, New Jersey Central, St. Paul, Michigan Central, Delaware, Lackawanna & Western and Pacific Mail. We give below the quotations of active shares at the close of business to-day.

day.

The following is a comparison of the bank

wastakes for the base	PMO MEGERS!		
June 17.	June 24.	Differe	nces.
Loans\$346,862,100	\$248,897,400	Inc \$1.	585,800
Specie 15,318,200	14,900,400	Dec	417,800
Legal tend's.54,360,200	54,204,100		156,100
Deposits 208,602,000	208,751,800		149,800
Circulation 15,646,400	15,603,500	Dec	42,900
The following table	a show the	MATAM	onte in

foreign trade

For the week	ended Ju	ane 24:	
Total for week Prev. reported	1874. \$6,646,571 04,507,010	1875. \$6,934,666 169,812,677	1876. \$4,492,551 149,006,396
Among the in	mports of	general m	

	Quant,	ASTOR
Anvils	100	\$85
Brass goods		32
Bronzes		1.45
Chains and anchors	10	65
Copper		8,54
Catlery	35	13,46
Gas Fixtures	1	21
Guns		4.14
Hardware		71
Iron, plg, tons		4.8
Iron, other, tons	116	3.6
Iron ore, tons	500	96
Lead, pigs	2.255	15.2
Metal goods	131	10.2
Needles		8.6
Old metal		9
Platina		8,1
Plated ware		1
Per, caps		1.9
Saddlery		1.6
Steel	1 910	17.8
Tiv, boxes	90 110	119.6
Tin, 1344 slabs	190 310	20.1
Wire		3,8
		0,0
EXPORTS, EXCLUSIVE OF	SPECIE.	
For the wook anded June 27 .		

ne 27 :	E.
1875. \$5,218,653 116,538,343	1876. \$6,674,504 120,290,599
SPECIE.	<b>\$125,965,103</b>
	1875. \$5,218,653 116,533,343 \$121,751,996

For the week ended June 24:	
Total for the week	165 785
Total since Jan. 1, 1876	9850
Same time in 1875	
Same time in 1874	509
Same time in 1873	361
Same time in 1872 742,	715
Government bonds at the close were stro and higher. We quote:	ng
Bid. Ask	ed.
U. S. Currency 6s126% 12	7
II. S. 6s 1881, reg 1195 11	01/

Total since Jan. 1, 1870	. 44,167,950
Same time in 1875	0,586,935
Same time in 1874	2,513,502
Same time in 1873	1,959,961
Same time in 1872	
Government bonds at the close we	ere strong
and higher. We quote:	9 100
Bid.	Asked.
U. S. Currency 6s	127
U. S. 6s 1881, reg 119%	119%
U. S. 6s: 1881. cou	19834
U. S. 5-20 1865, reg	116%
U. S. 5-30 1865, cou	116%
C. S. 5-90 1865. new reg	117%
II. S. 5-90 18t5, con	190%
U. S. 5-20 1867, reg119%	119%
U. 8, 5-90 1867, con122%	122%
U. 8, 5-30 18/18, rez191	191%
C. S. 5-40 1868, con	12436
U. 8, 10-40 reg1171/2	117%
U. S. 10-40 cou 11816	118%
U. S. Sa. 1881, reg	117%
U. S. Se. 1881. cou	117%
C. S. 10-40 reg. 117 g U. S. 10-40 con 118 g U. S. 8a. 1881, reg. 117 g U. S. 5e. 1881, con 117 g U. S. 5e. 1881, con 117 g Central Pacific Gold Bonds 110	110%
The latest and closing quotations	were sa
follows:	
Bid.	Asked.
Atlantic & Pacific R. R. Preferred 2%	216
Atlantic & Pacific R. R. Preferred 2% Atlantic and Pacific Telegraph 17%	18
Chleago & Northwestern 43% Pref 66%	4334
" Pref 66%	6634
Chicago, Rock Island and Pacific 109%	100%
Chic., Bur. & Quincy	115%
Col., Chic. & Ind. Cent 814	4
Cleveland and Pittsburgh 924	9834
Clev. Col., Cib. and loopist.   93   1   1   1   1   1   1   1   1   1	103%
Consolidation Coal 40	4036
Canton 30	40
Del. Lack. and Western	107%
Delaware & Hudson Canal 105%	10536
Adams Express	110%
American Express 5834	59
Wells, Fargo & Co. Express 80%	90
Erie 13%	14
United States Express         80%           Wells, Fargo & Co. Express         80%           Erie         13%           Harlem         139%           Hannibai & St. Joseph         13%	142
Hannshal & St. Joseph 135	1436
" Prof 23%	24%

llinois Central...

Kaneas & Iva-Lage Shore... Michigan Central... Morris & Essex... Milwankee & St. Pat Pref.

Pref.

-		_
1		
1	New York Central 10714	1
1	New Jersey Central 73%	
1	New Jersey Southern 36	
1	Ohio & Mississippi 16%	
1	Pacific Mail	
1	Panama	
1	Pittsburgh & Fort Wayne	
1	Onekailver	
1	" Pref	
1	St. L. Kan City Northern 5	
1	St. L., Kan. City Northern 5 Pref 28	
1	Tol., Wabash & Western 2%	
	Union Pacific	
	Western Union Telegraph 70%	

#### GENERAL HARDWARE.

The intense heat which has prevailed during the week is unfavorable to any improvement in business, and our market is as dull and inactive as is usual in midsummer. An effort is being made to form a combination among the manuwill include the makers both East and West.

Graham & Haines, agents for the Wheeling Hinge Co., have received instructions not to sell better than at discount 55 and 5 per cent., of "Standard" Locks, they say: "In and the Stanley Works quote the same figures. No circulars to that effect have yet been issued. The American Screw Company will issue the following circular on the 1st prox .:

[No. 8.] Providence, July 1, 1876.
To the Hardware Trade: Having reduced our surplus stock of manufactured goods, we solicit for the month of July your orders upon the following terms and conditions:

20	M HOME	TBADE.	r Cent.	Die
			Americ	
Flat Head Iron Woo	d Games	HOIM	ZKIIIGIIG	DIRECT BUIL
Brass				
Round Head Iron	66			
" Brass	44			
Stove Bolts				
Tire Bolts, best qua	lity			
Iron Black, Iron Ti	nned, an	d Block a	ad Car	ringe l
Rivets				ang !
				)
Rivets in Bulk				
Coach Screws				
Terms cash with	n 20 day	s from da	te of in	avoice
For export trade	anacial r	wlose and	toeme	suri 11
		wices wind	retime	AATT
given upon applica	tion.			

As we have a lurge accumulation of orders, and, possibly, may not be able to complete all received in July, any unexecuted will be considered cancelled, or filled subject to rates ruling when goods are shipped, as parties ordering

ing when goods are the first partial floation, New York, Philadelphia or Baltimore.

Soliciting your orders, we remain,
Yours, very respectfully,
American Screw Co.

It will be seen by the above that the price of Flat Head Iron and Brass Wood Screws have been advanced about 121/2 per cent., and everything on the list for home trade has been advanced more or less, with the exception of Stove Bolts and Coach Screws, which remain at discount 50 per cent., the same as published by them in their circular No. 7, of June 1st.

The Tack Manufacturers' Association held a meeting to-day in Boston, but dispatches received in this city at a late hour give no intimation of any changes.

The manufacturers of Stamped Tinware also held a meeting to-day in this city, but nothing had transpired regarding their action at the close of business

In Foreign Hardware there is nothing new to notice. The Wiebusch & Hilger Hardware Company have been appointed sole agents for Q. S. Backus, manufacturer of Bit Braces and kindred goods.

The demand for Nails is very light, but the market is firm. We quote as before 10d., \$3.10 per keg, net, with a discount of 10 cents per keg for large orders.

The manufacturers of Wrought Iron Pipe held a meeting on the 15th instant, when the following list for extra and double extra strong Tubes and revised discounts were adopted:

WROUGHT IBON PIPE. June 15th, 1876.

The discount will be allowed in proportion to amount delivered to purchasers during any calendar month, as follows:

On net amounts.

On net amounts up to \$100, 45 % only.
Ov. 7 \$100 and up to \$300, 45&25% \$ from net.
" 500 " 1,500, 45&75% \$ " "
1,500 45&10 \$ " "

At time of rendering invoice 45 per cent. only to be deducted, and at end of calendar month the extra discount to be calculated and credited according to this scale.

This applies, of course, only to monthly accounts. Single bills adjusted at the time of

urchase, according to the scale, Buyers paying "spot cash" on receipt of in-olce and bill of lading will be allowed an ex-a discount of 1 per cent. from the net amount

f involces.

On plans of Pipe cut to special lengths, or ac-ording to diagram, the discount will be 40 per ent., with extra discounts as per sliding scale eccrding to amounts purebased.

MACON	ALC: N	WROUG	BT IBON TO	TRES.
ize.				Extra Double Strong, Ex. Strong.
14 .				18
				19
	9 3 4 0 0 0			. 10
M				. 15
6				. 15 30
N.				. 20 40
				88 81
				ma
****				
M				. 07 1'14
				. 71 1'44
W				. 1.36 2.72
				1-71 3-42
				9-10 4-36
				. # 10 9 00
				. 3.19 0.90
M				. 4.85 9.70
				. 5:70 11:40
0000				

The Corrugated Elbow Company, Cincinnati Ohio, have issued the following revised price list for Flat Crimped Elbows and Galvanized Leader Pipe. They quote Flat Crimped Elbown discount 15 per cent., and Galvanized Leader Pipe discount 35 per cent. The office of the company in this city is at No. 52 Cliff street. Prices of Flat Orimped Elbows

8	ize			ned or		Size			Galv'd
	ncl		45	\$1.50 1.75 2.00 2.75 3.00 3.50	5 6 7 8	inc	h]	er do	Z. \$4°86 6°06 7°06 8°56 11°06
		1	mproved	Galvas	ipe	d L	ader	Pipe.	

No. 27 Iron. .. per foot, 13c. .. 16c. 4 inch....per foot, 20c. 5 "..... 30c. J. Clark Wilson & Co., have issued the following revised price list for Snell's Boring Machine Augers, to take effect July 1, showing

an advance on all the sizes; the discount re-

dozen, discount 10 per cens., and dozen, discount 10 per cens., and control of the leading styles. They have also added the following lines to their business: Ornamental Real Brouze Hardware, the "Standard" Locks; a full line of Mortise Tumbler Locks, with flat steel nickel-plated keys; Weston's Patent Hoists and Brakes. A new line of Safety Hoisting apparatus, possessing some one wand valuable features. Of their new line of the leading apparatus, possessing some one wand valuable features. Of their new line of the leading apparatus, possessing some one wand valuable features. Of their new line of the leading apparatus, possessing some one wand valuable features. Of their new line of the leading apparatus, possessing some one wand valuable features. Of their new line of the leading apparatus, possessing some one wand valuable features. Of their new line of the leading apparatus, possessing some one wand valuable features. Of their new line of the leading styles, the valuable features are the last lateral for the leading apparatus, possessing some one wand valuable features. Of their new line of the leading styles are lateral for the leading styles. They have also added the following lines to their business: Ornamental Real Brouze Hardware, the "Stand Hooks, so. 1 and 2 "a cach in the cach in the cach in the leading styles. They have also stand Hooks, Os. 1 and 2 "a cach in the cach in th facturers of Strap and T Hinges, which, we are Locks, with flat steel nickel-plated keys; Wesinformed, is almost consummated, and which ton's Differential Pulley Blocks; Weston's the manufacture of these Locks (knowing that a demand exists for goods of a high grade), we have been guided throughout by the one consideration of quality, which includes strength, durability, finish and excellence of material and design. Therefore we make use only of brass springs, steel tumblers, heavy brass or bronze faces, heavy bronze bolts, and other parts stronger than found in ordinary goods. An inspection of our prices will show them to be as low as is compatible with firs'-class work and materials."

To parties ordering goods this book will be sent with first shipment. To others in the trade it will be forwarded on application and on receipt of fifty cents, to cover cost of forwarding, or will be delivered without charge anywhere in New York city. Their price list is accompanied by a discount sheet, dated July 1, giving the following prices:

ı	D's, per cen
ı	Yale Locks (except Prison Locks)
	Prison Locks
	Blank and Duplicate Keys *
١	"Standard" Locks
	Leed's Gate Fixtures
	Ornamental Real Bronze Goods
	Post Office Equipments
	Post Office Lock Boxes and Drawers *
	Weston's Differential Fulleys
	Extra Parts for Differential Pulleys
	Dotterer's Patent Car Locks
•	"Yale" Anodes (for Plating).
	*In addition to quantity discounts on large of
	dare as nor list

ders, as per list.

Prices for Master Key Work, Sample Blocks (exclusive of Locks thereon), and advertising cards are The closing of Hardware houses in this city

from Saturday, July 1st, to Wednesday, July 5th, will be very general, and other branches of trade have joined in the movement. In this connection we publish the following letter, which was sent to us by a Philadelphia Hardware house, on the same subject :

PHILADELPHIA, June 27, 1876.

Editor of The Iron Age—Dean Sir: A large number of our jobbing Hardware dealers have signed an agreement closing their piaces of business at the regular hour for closing on Saturday afternoon, July 1st, and keeping them closed until Wednesday morning, July 5th, at the regular hour for opening, so that virtually there will be a holiday, by the Hardware trade of this city, for three days following the 1st.

CENTENNIAL.

J. Clark Wilson & Co. bave in stock Round English Pattern Scythe Stores, which they claim to be the best goods of their class in the market. They offer them to the trade at \$10 per 100 net.

We print below the revised prices for heavy Hardware, issued by Lewis Oliver & Phillips, Pittsburgh, Pa., which came to hand too late to appear in its accustomed place:

to appear in its accustomed place:

The following are the Card rates, f. o. b. in Pittsburgh of Lewis, Oliver & Phillips, H. B. Newhail, 11 Warren St. New York, Agent.

Iron, standard list assorted sizes, for large orders, specifications to include Bands, small Bounds and Ovals, The rate of the second sizes, for large orders, specifications to include Bands, small Bounds and Ovals, The results of the second sizes of the se

Nuts and Washers in 25 lb. boxes, \$\( \) \text{\$\exitex{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\

| Recar Yoke, Ironed composite with Wt. Iron Blugs ... cacus, as except End Ferrules, with Wt. Iron Blugs ... cacus, as except End Ferrules, with Wt. Iron Blugs ... cacus, as except Bud Ferrules, with the second second

Se w set for each additional inch over 14 in. All lengths 17%c.; and Banca, 21%c. @ 22c. Tin Plates,-Wagon Brake Ratchets, each.

finished with guard, each.

Wrought Hammer Straps, beavy pattern, each.

Ruh Irona anch.

Tongue 8% the Neck Yoke Plates 9% c net Tongue Cap Iron, 1%, 2 & 2% in. wide, same price \$ B as No. 12 Band Iron. Wagon Chains. Stay. Lock and Tongue, 5-16 in, \$ B 9c net; \$ in. 10c net. Onr prices are all subject to change of market, without notice.

#### BRITISH IRON MARKET.

(Specially reported by cable for The Iron Age.) WEDNESDAY, June 28, 1876. Scotch Pig.-Business is fair and prices steady. The following are makers' quotations: 
 Gartaherrie No. 1
 65/6

 Cottness No. 1
 69/6

 Glengarnock No. 1
 63/6

 Eglinton No. 1
 57/6

Manufactured Iron and Rails are quiet and unchanged.

#### IRON.

American Pig.-The market shows more than usual duilness on account of the approaching holidays, which will interfere more than usual with business. There is no difference in prices, and we hear of no sales of any importance. The tendency seems to be toward a further curtailment of production. We quote as before: No. 1 Foundry \$22 @ \$23; No. 2 Foundry, \$20 @ \$21; Gray Forge, \$20.

Scotch Pig.-We note the sale of 200 tons Glengarnock, \$28 @ \$29; Gartsherrie, \$29; and & Co.: Eglinton, \$27.

#### METALS.

tional holidays that the metal markets in general on this side have felt the influence of the stagnation inseparable from this midsummer lull, nor do we expect much animation in any metal branch while the weather remains intensely het. Manufacturers have shown the utmost indifference, and as there have been some stray lots of Copper offering for sale all along, they have necessarily had to go at low figures. The sales thus effected have been confined to something I'ke 200,000 pounds Lake Superior, at 19½ c. @ 19½ c., cash. Baltimore remains scarce and nominal. Nothing has transpired in futures, which are not offered. The Wallaroo auction sale at London has come off at an average of £78. 10/, against £83 two months are some off at the same of £78. 10/, against £83 two months are some off at the same of £78. 10/, against £83 two months are some off at the same of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, against £83 two months are some off at an average of £78. 10/, aga Immediately preceding this public sale, Best S lerted had given way to £82, a decline of £1. 10/ and Chili Bars to £76, a decline of 10/. Operators at London probably depressed these descriptions purposely in anticipation of the auction of Wallaroo Copper, and in a couple of days a general rebound may take place, to judge from what happened two months ago. Metals in Europe, especially Copper, feel the dull times about as much as is the case here, and expectations as regards the more immediate future are freight paid only.

tions as regards the more immediate future are those set, the sanguing there as they are here. This is in a measure, due to the non-existence of as little sanguine there as they are here. This bridge and floof Bolts.

It to lin. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$350 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$450 net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. diam. from 15 to 4 ft. long. \$13 50 pt. do net 1 to 2 in. do net 1 to 2 in. do net 1 to 2 in. do net 1 to 2 in.

quantity orders, same as other wagon flattware, as noted below.

Plaw single Tree, Ironed complete, Irons all wrought, except hallcable Ferrule. Irons all each, 55c wagon Single Tree, Ironed complete, Irons all each, 65c wagon Single Tree, Ironed complete, Irons all each, 65c wagon Single Tree, Ironed Irons all wrought, except End Ferrules, with Wt. Iron Bilage....cach, 55c wagon Hove Ironed though much will, of course, depend on con-tinued full deliveries. Within a couple of days we shall know by cable those of the current month. Here the market has weakened again considerably. We quote, in gold: Straits, 17c. @ 171/c.; English Refined, 17%c. @ 18e., nominally; English Common, 171/c. @

The stock of Coke Tin at the seaports is getting to be considerably reduced. Business is, on the whole, rather quiet in this line of trade, but prices have run to such a ridiculously low figure that the least genuine revival may precipitate a serious rebound. It will, therefore, be advisable to have an eye on this metal, and in connection with it, study closely the reports from Wales. The latest accounts from there report the entire closing of several works, altogether aside from the general curtailment. This list of suspended operations will be further increased should there be a still greater yielding in values. In fact, the only sellers in England at the present day seem to be the finencially needy ones, and this of itself takes out of the market an additional quantity of Plates not replaced in a hurry. We quote at the close, in gold, per box, ordinary brands, large lots: Charcoal Bright, \$6.75 @ \$7; do. Ternes, \$6.371/4 @ \$6.50; Coke Tin, \$6; ditto Ternes, \$5.50.

Ternes, \$5:50.

Lead.—Notwithstanding the again more immediately warlike aspect of Eastern affairs in Europe, Lead has been upheld with extreme difficulty on the other side, because of the declining tendency in manufactures of Lead there. Here business has become so dull in everything pertaining to the Lead branch that prices are ill-sustained even at the present reduced quotations. Sales for the week do not prices are ill-sustained even at the present reduced quotations. Sales for the week do not exceed 75 tons Common Domestic, at 6:35c. @ 6:37½c., gold. Select St. Louis may be had at 7½c., currency, and Ordinary ditto, at 7c., currency. Foreign is nominal at 6%c., gold, for Common. The manufactures of Lead are inactive, as follows: Bar, 8¾c.; Pipe, 9½c., and Sheet, 10c., less 10 per cent. to the trade.

Spelter and Zinc.—The market for Domestic Spelter has been put to the test these last few days by a lot being offered from the West at 7½c., currency, yet falling to meet with a purchaser; in fact the highest bid that was obtainable was 7c., currency. Under these circumstances it is not an easy matter to explain why the combination parties ching to their

plain why the combination parties ching to their old figure of 8c., currency, less 1 per cent., which places them out of the market, and has been doing so for some time past. The demand from Brass manufacturers is so light that there are always parties but too anxious to sell even at a considerable reduction from the nominally at a considerable reduction from the nominally current price. Of Foreign Spelter there is none here, but a lot of "Silesian Union" sold to arrive at 7½c., gold, which is a full figure. We quote the ordinary run of Silesian Spelter, nominally, 7½c., gold. There is nothing of additional interest from Europe. Sheet Zinc.—Although not active, remains steady at 8½c. @ 8½c., currency, Domestic.

Antimony.—The leading producers in England go on screwing up prices, but as the market here lucks activity, we have not varied from 15¾c. @ 16c., gold, reduced as the stock may be.

may be.

#### Base Ball.

The following is the score of a game of base ball by Hardware nines of Cincinnati, played on the Star base ball grounds, Cincinnati, Ohio, Glengarnock, and 100 tons Carnbroe, on private on the 1st lustant, between the H. O. G.'s of terms. We quote as before: Coltness, \$30; R. W. Booth & Co. and U. B.'s of Howell, Gano

tit tidewater.  Old Rails.—We note the sale of 3500 tons, on private terms, and 175 tons at \$20, delivered at Fishkill. We quote \$21.50 @ \$23.	Shillito, r. f. 2 5   Crawford, s. s. 4     Haven, 3d b. 3 5   H. Bates, 3d b. 1 1     C. R. \( \times\) dams, c 1 5   C. Bates, 1st b. 5     C. S. Adams, 1st b. 2 4   Pierce, 2d b. 4     Brown, c. f. 3 4   Laird, r. f. 2     Moore, p. 2 4   Mummet, l. f. 1     Stewart, 2d b. 6 1   H. Hall, c. f. 4     Total 27 85   Tetal 27 3									
Scrap.—The market is quiet, and there is	INNINGS.									
ittle change. The latest sales are 300 tons	1 2 3 4 5 6 7 8	9								
rom dock at \$26, and 100 from yard at \$28.		2-35= 4-31								
METALS.  Copper.—We are now so close upon the na-	Home runs—U. B.'s, 1, by C. R. Adams, Umpire—F. Boehm, of Fire Fly's, Score—Mr. Gale. Time of game—2 hours and 50 minutes.	-								

The following is the score of a game of base ball played in the city of Detroit, Mich., between employes of the Wholesale Hardware houses of Buhl, Ducharme & Co., and Ducharme, Fletcher & Co., on the 24th instant :

"Buhl, Ducharme & Co." | "Ducharme, Fletcher & Co." .....21 31 Total.

Buhl, Ducharme & Co..... 0 0 2 9 4 7 9-31 Ducharme, Fietcher & Co.... 1 2 5 5 1 0 0-14 Umpire—Mr. C. Walker, of Cass Base Ball Club. Scorer for B. D. & Co.—H. M. Rice. Scorer for D. F. & Co.—C. Fisher.

The general features of the trade have not undergone any change since our last writing. Slight changes are, however, mausfesting themselves, and while the companies and dealers find an absolute stagnation, the retailers find a marked improvement. The amount of retail business is not yet large enough to make itself felt, but it is nearly equal to last year at this time. Much less outside Coal is offered now than a month ago, and prices are much stiffer than at that time. We hear of some retailers who have put in small lets of company Coals upon their season contracts. The stoppage upon alternate weeks is evidently beginning to have its effect. The public are settling down to accepting the combination as a fixed fact. Coal can still be obtained for each considerably below circular rates.

We quote as follows:			
Cumberland, at Georgetown	13-51	2	23-7
West Virginia, at Baltimore	4 50	3	6.0
Kittaning f. o. b., Baitimore	4-20		4.8
Newburg Orrel, at		ā	4:5
Despard, at Baltimore		35	4.5
Broad Top, at South Amboy		48	4.7
Morrisdale, Wigtons		13	5.0
Cunard		68	5.0
Consolidation Coal Co. f. o. b., George-		_	
town		0	3.6
Consolidation Coal Co. J. o. b., Halti-		_	
more		03	3-9
In barges at New York	**	6	5.8
Maryland Coal Co. f. o. b., Baltimore		6	4.0
Maryland Coal Co f o b Gagggetown		100	60 - 15

PRICES	FOR .	JUNE				
	Lump.	Steamer.	Broken.	Egg.	Stove.	Chestnut
PENNSYLVANIA COAL	co., at	We	chaw	ken,	N.	J,
Pitteton	4:70	4.80	4.90	5 00	5.60	4.
	n, N.	J.				
Lackawanna	. 4.70	4.80	4.90	5.00	5.60	41
	son, N	. J.				
Old Company's Summit Honey-Brook Lehigh Wilkes-Barre Plymouth Red Ash	5·20 5·20 4·70	4.80	5:00 5:00 4:90 4:90	5·00 5·00 5·00 5·10	5·60 5·60 5·60 5·70	4 4
	_					
PHILADELPHIA AND RE at Port Richn					RON	CC
Hard White Ash Coal.	4 35	4.45	4.55	4.62		
Coal	4 35	4.45	4.55	4 · 63 4 · 75 4 · 85	5 · 25 5 · 35 5 · 35	4.4
Lorberry Lykens Valley			5·45 5·90	5.45	5·45 5·90	4:1
Deliverable at the						
Hard White Ash Coal Free Burning White As						
Coal Schuylkili Red Ash Shamokin	4.40	4.80	4.90	5.10	5·70 5·70	4.8
DELAWARE, LACKAWANI	NA AN	D WI	ESTE	RN, a	t H	obo
Scranton			4.00	× .00	e. en	4.4

PREIGHTS-FBR	thport, Port ath Amboy, Weehawk'n.	phia.	J. J	OWB.
Ponts.	From Elizabethp Johnson, South Hoboken & Wee	From Philadelphi	From Baltimore.	From Georgetown
Augusta, Me			*****	****

Ponts.	From Elizabe Johnson, So Hoboken &	From Philade	From Baltime	From Georget
Augusta, Me	****		\$1.75	****
Amesbury, Mass Bangor, Me Bath, Me	\$1.00 1.00	****	2·00 1·50	\$1·50
Baltimore	90	1.30	1.45 1.40	1.60
Bridgeport, Ct Bristol, R. I. Cambridgep't, Mass	1.00		****	****
Dighton	*1.00	****	1.40	1:30
East Cambridge Fall River Hackensack	-80	1.25	1.40	1.40
Hallowell, Me	****	****		****
Hartford Hoboken Hudson	40		1.20	1.25
Jersey City	1.10		1.20	1-95
Lynn, Mass Middletown	190	****	****	****
Mystic Newark		***	1.80	2712
New Bedford	1.10	***	1.40	1.40
New Haven	'65 '80 '85	****	1:40	1.40
New York	'40 '70	70	1.40	1.30
Norwich Pawtucket	90	****	1.45	
Philadelphia	90		1.45	1.80
Portland	1.10	1.25	1.40	1.40 1.40
Poughkeepsie, N. Y Rockland	90	****	****	1.40
Rockport	****	****	****	****
Sag Harbor	1.00	****	****	2722
Salem, Mass Salisbury Pt., Mass	1.00	****	1.60	1.60
Stamford	·68		****	****
Saybrook	-80		****	
Taunton	65	****	****	****
Troy Warren, R. I	-85	****	****	****
Wareham	****		1.45	1.60
Weymouth	****		****	1.65

\*3c. per bridge extra. † And Sound Towing. Harbor Freights, 40 cents.

#### IMPORTATIONS.

Of Hardware, Iron, Steel and Metals inte the Port of New York, for the week ending June 27, 1876 : Naylor & Co.

Bars, 2840
Phelps, Dodge & Co.
Bundles, 279
Paulding, Kemble & Co.
Pieces, 2
Sampson G. G.
Pig, tons, 200
Wallace W. H.
Boller flues, 636 Hardware.

Pig, tons, 200 Bars, 402

Steel.

1963
Lead, pige, 1311
Tin, bxs., 601
Without Bills of Lading,
Tin, elabs, 1934
Lead, pigs, 714
Lead, cs., 14
Lead, cks., 24

Packages, 15
Mdse, pkgs., 11
Blumenthal I. & A.
Packages, 4
Curley Bros.
Mdse. pkgs., 1
Fessenden S. H.
Packages, 17
Fuller Bros.
Mdsc. pkgs., 3
Friedmann & Lauterjung
Mdse. pkgs., 4
Friederichs R. & Co.
Cases, 6
Field Alfred & Co.
Chains, cks., 3
Hildick A. H.
Chaine, pkgs., 3
Jordan W. F.
Chains, eks., 16
Livingstone W. & F.
Grindstones, 1042
Moore's J. P. Sons,
Mdse. pkgs., 8
Schoverling & Daly,
Packages 5

Coils, 256
Bessemer, blooms, 686
Marvel Wm. D.
Ore, tons, 250

Boker Hermann & Co.

Steel.
Haigh J. Lloyd,
Bundles, 247
Naylor Thos.
Packages, 7
Naylor & Co.
Axles, cast, 12
Prosser Thos. & Sons,
Mdsc. pkgs, 1
Sulsbacher, Heymans
Wolff & Co.
Packages, 457
Order. Bundles, 189 Packages, 5
Mdse. pkgs., 3
Van Wart & McCoy,
Mdse. pkgs., 3
Willett & Hamlin,
Nalls, eks., 13
Wiebusch & Hillger Mfg.
Co. Metals. Agostini Jos. Berap, copper, bxs., 4
Byrne Joseph & Co.
Tin plates, bxs., 800
Dickerson, Van Dusen & Co.
Ironware, pkgs., 5
Western File Co.
Cases, 1
Walker & Renwick,
Guns, cs., 10
Guns, cks., 12
Order. Co.
Tin, ingot\*, 300
Frontell F. & Sens,
Scrap, zluc, cks., 2
Haxtum B.
Lead, pigs, 1799
Montell F. T. & Sons, Order. Wire rods, cells, 801 Scrap, brass, tes., hbds., 6; bbls., bxs., 6; cks., 6 Iron. Bcrap, copper, tcs., 2; hhds., 1; bbls., 4; cks., 2; pcs., 2 Scrap lead, tcs., 3; cks., 1 Brown, Shipley & Co. Bars, 2667 Brown Bros, & Co. Pig, pca, 3454 Bars, 2245 Champin H. Pig, lots, 1 Dickerson, Van Dusen & Scrap, metal, cr., 46 Naylor & Co. Tin plates, bxs., 759
Phelps, Dodge & Co.
Zinc, cks., 100
Order Dickerson, van Dusen & Co.
Sheet, pkgs., 50
Gomez, Pearsall & Co.
Scrap, tons, 4
Mitander Kils,
Bars, 347
Nati rods, bdls., 1459
Coils, 256
Bessemer, blooms,

OLD METALS, PAPER STOCK, &c.

Trade in Old Metals, Rags and Paper Stock still continues dull, and we see no prospect of business soon reviving. In Old Metals the supply is greater than the demand, and stocks

#### PITTSBURGH.

Office of The Iron Age, 14 Fifth Avenue, 1 PITTSBURGH, June 27, 1876.

Pig Iron.-The market hereabout continued to be dull, and in a general way devoid of any thing particularly new or important. As but very few of the puddling furnaces are in blast, the consumption of Pig is very much reduced, and the probability is that there will not be much wanted until the latter part of next month, as there is usually a pretty general shutting down during the first half of July to take stock and make repairs, and there is no disposition manifested to anticipate future wants. The sales reported during the past week did not aggregate more than 800 tons, with the exception of two lots of 500 tons each, which were sold in first hands. Prices unchanged; \$21.50 to \$22.50, 4 mos., for Mill Irons and \$23 to \$25 for Nos. 2 and 1 Coal Smelted Foundry, and \$25 to \$28 for same grades of Hanging Rock Charcoal.

MANUFACTURED IRON-Continues dull, and ers generally bought pretty freely before the advance, and those who have not much stock are buying only as immediate necessities require, being apprehensive that the combination rates cannot be maintained. In this, however, they are almost certain to be discovered. no immediate improvement is expected; buyare almost certain to be disappointed, as the combination is growing stronger instead of weakening, and the main object of the association is to keep up prices sufficiently to afford a margin for profit, and prevent the ruinous cutting so prevalent before it was organized. Quotations may be given at 2.30c. to 2.50c., 60 days, for Bars, according to size of order.

NAILS.-Some of our factories are working up to their full capacity, having sold considerably ahead of their production prior to the advance, while others are not pressed; however, notwithstanding orders have slackened off, business is all that can be expected, and prices are firm but unchanged. We continue to quote at \$2.85, 60 days, for less than 200 kegs, and \$2.75, 60 days, for orders for 200 kegs and upward.

STEEL.—The Steel mills are all in operation, some of them working full. There is a steady demand for all the leading sizes and specialties, the domestic having almost entirely supplanted the foreign article. About the only complaint is in regard to prices, which are be ing cut pretty close; but this is the case in almost everything.

SCRAP.-There is very little doing in Scrap Iron, and prices are weak; but as stocks are light they are no lower. No. 1 Wrought nominal at \$37 @ \$28, selling by dealers to mills. Scrap Steel is in fair demand, but the inquiry is chiefly for small lots, while prices are nominally unchanged.

PREMATURE. - The report circulated last week that the Sable Iron and Nail Mill had been sold by the trustees for \$150,000, was premature. It is true such an offer was made, but it was re jected. It will probably be offered at public le soon again, when the creditors expect to realize a considerably better price than the one to which reference has been made.

PETROLEUM.-This important interest continues fairly active. Nearly all our refineries are in operation, and the general position of the market is more favorable for refiners than it has been this year, in one respect, and an important one. While the raw atticle is barely bolding its own, the product is firm and higher. Pittsburgh has turned out more oil from January 1 up to this time than ever before in the same time. The shipments to Richmond via river to Huntington have been about 40,000 barrels.

CORE.-A combination has been formed by Western manufacturers similar to that of iron and glass, the object being to keep prices up sufficiently to afford a living profit, and to regulate, if possible, production. Business continues dull.

#### BOSTON.

June 24. Pig continues along in a stupid way, holders taking pretty nearly what buyers offer, but selling very little. There is in fact a alight view of improvement in the tone of the market, more especially noticeable in holders being unwilling to sell more than five or eight ton lots at the prices, while here and there a small advance is asked. Bar has a quiet job-Order.
Tin plates, brs., 5347
Terne plates, brs.,
1363 bing trade at from \$51 to \$55, according to order and character of buyer. The improved tone last noted is upheld, while the advices from the West are more uniformly favorable for a steadier market. Steel remains quiet and firm. We quote: American Tool, 14c. to 15c.; American Machinery, 8%c. to 9%c.; Bessemer

Tires, 5%c.; Sweet's Excelsior Tire, 7%c.; English Tool, 15%c., gold. Copper at 29c., our inside of a week ago, is easy, and siles have been made at less prices although no lower quotations are announced. There is a little more inquiry but no indications of confidence among buyers that they consider the bottom reached. There seems to be some question as to the uniformity of manufacturing companies. Composition Yellow Metal and Lead are all in a weak condition. Iron is not wanted at any price. Brass is selling slowly at drooping prices. In the Rag and Paper Stock markets there is very little doing, and prices remain nominally unchanged. We quote the following as the current purchasing rates:

Old Metals.—Copper, 15c. @ 16c. per lb.; Yellow Metal loc.; Brass, 9e; Composition, heavy, 10c. @ 11c.; Lead, solid, 5½c.; Tea Lead, 5c.; Zinc, 4c. @ 4½c.; Pewter, No. 1, 13c.; Wrought Iron, \$21 per ton; Burnt Iron, \$6 per ton.

Misch, Wrought Iron, \$21 per ton; Machinery, 6o., 122 per ton; Burnt Iron, \$6 per ton.

Rays, &c.—Canvas, Linen, 4½c. @ 5½c.; do., 50 c., 5

CINCINNATI.

Mesers. L. R. Hull & Co., under date of June 24, write us as follows: Pio Iron.—
We think, on the whole, the movement during the past week has been somewhat better, and the inquiry appears well sustained. It is reported that a small amount of a choice brand of Hanging Rock has been sold at \$23-50, here, butwee un ierstand no more can be had at same price. This is an exception, and the sacrifice made was unnecessary, even if the aim was a quick sale. Best No. 1 Foundry is firm at \$24-50, here, with more likelihood of an advance than a decline.

r	CHARCOAL.
	Hanging Rock No. 1 # ton. #24'00 @25'00 —4 mos.  No. 2
l.	Southern Brands No. 1 23 00 @ -4 mos4 mos4 mos.
	Virgin'a No. 1
	STONE COAL AND COKE.
	Hanging Rock No. 1 \$\times\$ ton. \$22.00 @ 23.00—4 mos. \$\times\$ Forge 20.00 @ 21.00—4 mos.
	Red Short No. 1
	Am. Scotch, No. 1 94 00 @ 25 00 4 mos.
ч	COLD BLAST.
	Hanging Rock Car Wheel * tn.\$40**00 @ 45*00—4 mos. Missouri ** 35*00 @ 40*00—4 mos. Southern Brids ** 30*00 @ 40*00—4 mos. Machinery and Forge 30*00 @ 35*00—4 mos.

#### ST. LOUIS.

	itself will lighten trade considerably.
	Mo. Stone Com, No. 1 F dry. 8 to to the 29 to-1 mos
	" No. 2 F'dry. 23 00 @ 24 00 4 mos
	" Gray Mill 22'00 @ 23'00-4 mos
	" Charcoal, No. 1 F'dry 23::0 @ 24:00-4 mos
	No. 2 F'dry 21'00 @ 23'00-4 mos.
	** ****** ****************************
٩	Tenn. Charcoal No. 1 F'dry. 23:00 @ 24:00-4 mos.
Л	" No. 2 F'dev 22:00 @ 23:00-4 mos
1	" Grav Mill 91:00 @ 99:00 4 mos
d	Tenn. & H. R. Coke Iron No. 1
1	F'dry 25-00 @ 26-00-4 mos.
ı	Tenn. & H. R. Coke Iron No. 2
d	61 day 92-00 @ 94-00 A mon
- 1	
	H. R. Charcoal No. 1 F'dry 25 00 @ 26 00 -4 mos.
1	H. R. " No. 2 F'dry 24'00 @ 25'00-4 mos.
I	H. R. 41 No. 2 F'dry 24'00 @ 25'00—4 mos. H. R. 41 Gray Mill 24'00 @ 25'00—4 mos.
31	Massillon from vo. 1 29'00 @ 31'00-4 mos.
Ч	S. Ohio Am. Scotch 24'00 @ 26'00-1 mos.
d	Mo. Charcoal Blooms 50.00 @ 60.00-4 mos.
1	" Scrap " 45'00 @ 50'00-4 mos.
	Mo. Charcoal Hammered
ı	Billets 75 00 @ 80 00-4 mos.
۱	Assorted Bar Iron @ 2% rates.
ı	No. 1 Wrought Scrap 90 @
ı	Heavy Cast " 63 @
g	Light Cast . " 45 @
9	No. 1 Wrought Scrap '90 @ Heavy Cast '' '63 @ Light Cast '' '45 @

#### CHATTANOOGA.

Mr. S. B. Lowe, under date of June 24, reports as follows: But little change can be noted either in price or in movements of Irou at this point. Small orders are coming in quite freely from the South, while from the West one bunured to five hundred ton lots have been sold within the past week. COKE. 

No. 1 and 2 Forge
HOT BLAST CHARCOAL,
No. 1 Foundry. extra. \$21.00 @ 35.00 No. 1 Foundry. 19.51 @ 21.00 No. 2 Foundry. 17.00 @ 19.00 No. 1 and 2 Forge. 16.01 @ 17.00 White and Mottled. 15.00 @ 16.00
COLD BLAST CHARCOAL.
Car Wheel Metal \$23.00 @ 28.00 Forge Metal 18.00 @ 20.00 No. 1 Wrought Scrap per lb., \$4.0 @ 20.00 No 2 Wrought Scrap \$5.0 @ 5.0 @ 20.00 Cast Scrap, Heavy per ton, \$12.00 @ 14.00 Cast Scrap, Light \$8.00 @ 10.00 Old Car Wheels 17.0 @ 012 Reliable 18.00 @ 21.50

#### BALTIMORE.

Mesars. WYETH & BROTHER, Iron and Steel merchants, South Charles and Lombard streets, report us the following prices under date of June 27: The amount of business transacted the past week was rather beyond the average, and the general feeling somewhat more hope-ful. We quote the market as firmer with un-

altered values.
AMERICAN REPENED BAR LION.
1 to 6 wide by 1% to 1 thick 1 to 4% wide by 1% to 2 thick i 2% to 2 4-10c. 9 b Round and square, ordinary sizes, from
% to 2 mclusive
Hoop Iron, 1% wide and upward 3% to 4c.
Band Iron, from 11/4 to 4 in. wide 3 to 31/4c.
Horse Shoe Iron % to 1 wide by % to %
titlek 3k to 4c 4s
Norway Nall Rods
Black Diamond Cast Steel, Flats, Squares
and Octagon, ordinary sizes, 15 to 15%c. "
Machinery Steel
Cast Spring Steel 9 to 9%c. 44
Homogeneous Steel Plate
Perkins' Horse Shoes, per keg of 100 lbs \$4.87%  Mule Shoes
Common Horse Nails, from 14c. to 18c. per pound,
10 0 0 0
Putnam Horse Nalls. 23 24 25 26 28c. per 2:
Globe Horse Nails 23 24 25 26 28c. per D. R. R. Spikes
Messrs, R. C. HOPPMAN & Co., Iron and com-

mission merchants, Nos. 23 and 25 South Frederick street, report the Pig Iron market as follows, under date of June 27: We have no change to note in the Iron market since our

t report	1	Ne	9	U	10	al	l	e	0.0													
lti.nore	Char	coa	ı.															\$30	-00	0	85	00
rginia	85									٠							6	28	-00	0	34	-00
thracite	No.	1									9							23	100	0	24	-00
44	No.																					
50	No.																					
hite and	Mott	led				0		0 1					0	0	0	0 0		17	00	0	19	00

#### CLEVELAND.

Messrs. C. E. BINGHAM & Co., 25 West Mein street, under date of June 25, quote the Iron market as follows, 4 mos. time:

No. 1 Lake Superior	Charcoal,		327.00-4 m.
No. 8	48		. 26·50-4 m.
No. 1 Anthracite			25.50-4 m.
No. 9 45			23.00-4 m.
No. 1 Bituminous			25'00-4 m.
Mo: 1 Charmy Walley	Am Goot	a liv	97 00 4 m
B-1 "	46		26:03-4 m.
B-1 ** No. 2, **	41 SCOU		24.00-4 m.
No. 1 Massillon			26:50-4 m.
B-1			
No. 9			
CAR WHEEL	AND MALL	EABLE 1	LOW.
No. 3 Lake Superior 6	Charcoul.		\$27.53-4 m.
			27.50-4 m.
Nos. 5 & 6 "		49444444	
	STREET, IT		
Nos. 1 and 2 Lake Su	perior Chi	arcoal	\$27.00-4 m.
P	ORGE IRO	W.	
No. 1 Gray White and Mottled			\$22.00—4 m. 20.50—4 m.

#### RICHMOND.

Mr. Asa Snyder, Iron Merchant and Furnace Agent, Richmond, Va., writes as follows under date of June 26: There exists the same quiet Iron market as at 1sst report. Sales for the past week reach about 200 tons. The receipts past week reach about 200 tons. The recelpts continue very light. The Irons now coming forward are very superior. The stock of indifferent Iron has nearly all disappeared. The market is a shade weaker, although quotations here are not changed.

Virginia hot blast Charcoal (according to brand) Va. hot blast Coke Pig Iron	94.00 @ 28.00
45 45 55 05	No. 8 ex. 19.00 @ 20.00

#### FOREIGN.

FRANCE. (Moniteur des Interets Materiels).

Panis, June 11, 1876.—Metals.—Business has been interrupted by the Whitsuntide holidays, and, moreover. by the uncertainties which attend the development of Eastern affairs. Money remains as easy as ever, which is due to the extreme caution exercised by capitalists generally, and the commercial classes in particular. Add to this the extreme reluctance on the part of consumers to replenish supplies, the total absence of speculation, and the approach of the dull season, and we have an explanation for the drooping attitude of the metal markets of Europe. Copper.—The announcement by cable of light charters at Valparaiso has failed to produce a favorable effect on the Copper market, parily in consequence of the auction sale of the Wallaroo Company, which is to come off at the end of the mouth at London. Statistically, Copper seems safe enough, but, com-(Montteur des Interets Materiels). copper.—The announcement of produce a favorable effect on the Copper market, partly in consequence of the auction sale of the Wallarco Company, which is to come off at the end of the mouth at London. Statistically, Copper seems safe enough, but, compared with other qualities, Chiil Bars are decidedly too high, hence their gradual decline, which begins to carry down the whole market. We have been weaker here at the following quotations: Chiil Bars, deliverable at Havre, 212-31 francs; Common ditto, 207-30; Ingots, 215; English Tough Cake, 212-50; and pure Corocoro Ore, 212-75. Havre has become very quiet at 207-30 for 210 for first brands Chiil Bars; 205 to 207-30 for good current, and 203-73 to 203 for Lota and Urmeneta. Marseilles is keeping up current rates with some clifficulty; Red Tokat at 203 francs; Small Ingots, 210; Bolis, 245; Sheathing, 210; Yellow Metal ditto, 215 to 22) fr nes, less 3 per cent. for c.sh. Tin.—A great effort is being made by the supporters of Tin to come to the rescue of droping values. Accounts from Australia by mail predicts a folling off in production of between 40 and 50 per cent. This decrease is to result from a partial abandonment of the mines. We have been but too frequently treated to stories of this kind, and it would be wrong to place too much faith in them. As long as the statistical position remains a bad one, we do not anticipate any perasuent recovery of values. Paris has remained quiescent, as follows: Banca, deliverable at Havre or Paris, 225 francs; Stratts, 200; English at Havre, and the substitute of the process of the substitute of the process of the substitute of the subst

#### BELGIUM.

BELGIUM.

(Revae Universalis).

BRUSSELS, June 11, 1876.—Iron.—Prices have remained stationary. The steadiness now observable in Iron values has caused a good many consumers of special machinery to give orders to our larger works, in filling which they are now engaged. It is to be presumed that this resolution to order now what had been so much delayed will become more general in Belgium. Other countries in the habit of getting their machinery from Belgium will, in all likelihood, follow the same example, upon the theory that Iron and steel have touched bottom. A revival is thus brought about by the actual demand for bone fide consumption. Gradually this tendency will spread all over the North of Europe, and the capacity of absorption will thus be restored upon a sound basis, it will take three long years to bring about this desideratum; we have all passed through a severe ordeal, but the establishments left standing are now in an excellent position to avail themselves of any change for the better. The raw material and fuel are rainously cheap. Their working capacity has been greatly improved by new machinery and tools, and we are now inly able to cope with foreign competition, both at home and abroad. God.—On the 6th instant there was an opening of tenders for a large amount, which the government stood in need of. The prices obtained were very low. Simultaneously our gas works had laid in a large supply. The subject which now occupies the attention of the producers of Coal and Iron in Belgium, particularly, is the expiration of the treaty of commerce between Belgium and Prance, which will take place during the summer of next year. A good many views are being exchanged between the partice interested in both countries, and it is to be hoped that a liberal and equitable arrangement will be arraved at, satisfying both countries.

#### GERMANY. (Borsenhalle).

treme quietness as has to be expected during this sea-on of the year. Meanwhile the financial state of affairs remains devoid of sectlement. Rastern politics have also ceased to spread uneasiners, and overything seems to point to a pe lod of great duliness. Both consumers and dealers have, to some extent at least, replenished supplies, and importers, not being in a speculative mood, are quitting the scaports and large inland cities in order to take rest at the watering places. Copper.—Not much activity being perceptible in the consumptive demand for Copper, larger dealings have been abandoned for the time being. Our markets have been quiet, and we quote as follows: English and Australian at Berlin, 87 to 88; Stettin, 93-50; Drontheim, 90; Minnesota, 109; Quincy, 97; and Best Selected, 87 marks. Tin.—The continual fluctuations which have been taking place between Holland and England since the Dutch sale have disconcerted our markets a good deal. There seems to be less Tin conang from Australia and the Straits, but the heavy stock at London apparently sets at naught any prospect for permanent improvement. We have been quiet here at 91 for Banca, at 85 for Common English and 87 for ditto Refined. Berlin quotes as follows: Banca, 89-30 to 90; English Revined, 78-50 to 73. Lead.—Those who were in need have now stocked up well for the summer season. The consequence is a gradual slackening and weakening in the German markets. Very little is bought for government account. Berlin quotes Hartz, Tarnowitz and Saxonlan, 22 to 23 marks. Stettin unchanged at 27 for Spanish, and 23 to 24 for German. We have been very quiet here, and quote, nominally: German, 25 to 10 25. Speller.—A moderate demand continues since the large sales which took place at Bresian three weeks ago. Berlin is steady at 24 to 25 marks, and the current quotation is still 24-50. The foregoing quotations are all for 59 kilos, in marks.

HOLLAND.

(Koch & Vierboom).

ROTTERDAM, June 13, 1876.—77n.—Since the auction sale the market has quieted down again, and lianca has receded—first to 45%, and subsequently to 45% guiders, while Billiton has been sold at 43%. There are fow sellers at these prices; but, on the other hand, purchasers h. ving supplied themselves pretty largely at the late sale, show little anxiety to extend their operations. This quiet is, moreover, in con-onance with the general aspect of the markets, London showing renewed signs of wavering.

AUSTRALIA.

AUSTRALIA.

Adelaide Advertiser.

ADELAIDE, April 21, 1876.—Copper.—The Moonta mine.—We have received a copy of the accounts of this flourishing mine for the half-year ending May 30. The output of ore has been well sustained, the total quantity raised being 19,162 tons of 20 per cent. fine Copper. As there were 3393 tons on hand, the directors found that they had 13,265 tons to dispose of during the six months just closed. Of this they sold to the Wallaroo Company, under the terms of agreement entered into some time ago, 10,265 tons, which realized the handsome sum of £128, 112. Capt. Hancock gives detailed particulars of the working of the 26 shafts, from which we gather that the yield varies from 1 ton to 8 tons per fathom, with a richness varying from 15 to 35 per cent. The staff from some of the trial shafts is reported to present favorable indications, and the extensive plant and surface arrangements are all in efficient order. Altogether, the position and prosperity of the mine continue to be most favorable and encoursglug. The Burra Burra Mine.—The 31st annual report of this still. It may mine shows that during the six months ending March 31, the production of ore reached 95) tons of 37 per cent. fine Copper. This excellent result, the directors state, has been obtained by continued improvement in the machinery for dressing, which is now so efficient and economical that extremely poor ore stuff can be proflably treated, and bought up to a very high produce. There has been no less than 43,200 tons of naulage during the last six months, and 35,530 tons of ore have passed through the machinery. Capt. Sanuders, after giving account of the estailed workings, states that so far as the deep workings have been developed the proceeds excel his expectations, and the good opinion he formerly held has been sustained.

#### NEW CALEDONIA.

NEW CALEDONIA.

(Melbourne Argus.)

Melbourne, April \$2, 1876.—Nickel.—The principal Nickel manes now being worked are on the east coast of the island. The Ballard Mine, at Anilaw, and M. Hankar's mine, at Kanala, are the most important, their output of ore being of the value of about £1000 per month. Most of it is sent to France. Contracts have been entered into under which all the ore that can be produced will be taken by Continental European countries, and the demand is much greater than can be met until more mines are opened up. Most of the capital invested in the mines now at work is Melbourne capital. The bank of Noumea advances freely upon ore at the rate of from £20 to £25 per ton, on ore yielding 10 per cent. of metal. The metal is worth 14/ per ton, at which price the American government purchases Nickel to be used as an alloy in its sliver currency. Certain Continental nations use it in the manufacture of smaller coits. The demand for the metal is understood to be practically unlimited. If only there were reasonable assurance of a considerable and steady supply, it would be introduced into several of the manufacturing arts, in which it has not yet found a place. Melbourne silversmiths would use it extensively if they could get it. Arrangements are now being made with a view to the further introduction of Australian and British capital into this new field of enterprise. Noumea is 1050 miles distant from Sydney, and is reached by steamship in about four days. The mining regulations of New Caledonia seem to have been framed on Victorian models with some improvements.

#### EAST INDIES

(Aitken, Spence & Co.)

COLOMBO, May 9, 1876.—Piumbago.—Only a moderate business doing for London, and a few orders are being completed for the States. The sizes most in request are Chips and Dust at about £7. 10/ and £4. 15/, first cost, respectively; ordinary size Lumps are chaper at about £14 per ton. Receipts from the interior continue limited. P. S.—May 13, 1876.—Some small orders have receatly been received from the small orders have receasily been received from the States and from London. Demand continues moderate. Market quiet at our quotations. We quote at the close, free on board, per ton. Lump, 310; Chip, 180; Dust, 123/. Shipping.—The Weidenhielm is now loading, and by her aimost all existing orders will be completed. Cargo very scarce. Exchange.—Market closes weak at 1,9% for credit, and 1,9% for documents. Bank selling rate, 1/8%; private credit rate nominal. documents.

Singapore, May 6, 1876—74m—Shortly after our last report prices touched \$30.50 per picul, with a small transaction at \$30.27% per picul, but almost immediately buying for America set in, and though not extensive, it sufficed to ruise the price to \$31, and thou to \$21.00 per picul. Supplies continue unusually small, and though more favorable weather for washing the ore promises to give us larger quantities, we shall continue under the average until prices materially change. Freights remain depressed. The Perusana is loading for New York at a freight for tin to be determined on the basis of coffee. Exchange on London is \$4,135 per \$5, 6 months signate credits. Exports from the Straits to the United States for the first four months: 12,850 piculs in 1876 against \$2,594, 14,112, 12,768, 21,786, 15,399 and 14,815 in 1870. (Gilfillan, Wood & Co.)

### Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.)

SHEFFIELD, ENG., June 12, 1876. THE EASTERN QUESTION

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has been so prominently before us of late that I cannot do less than make a passing reference to its present aspects and the probability that now exists of a peaceful solution of the Turkish Hamsunon, June 10, 1876.—Metals.—Not much change can be reported. There have been some interruptions in active trade in consequence of the builtays, and the general tone remains one of extent of which will doubtless have been cabled.

across to your daily papers, has had a tendency to make matters appear better than they had for some time previously looked, and we are now in the hope that the Sick Man's latest convulsion may pass away without being the cause of a general blaze of war. Nobody here for a moment endeavors to extenuate the existence of European Turkey per se, but merely as a stop gap, as an admirable check to the movements eastward of the "Wily Mu-covite"-as the newspaper writers of a certain stamp term the Russians. As I have stated in a former letter, we are content to let the government pursue its own course, being fully convinced that its policy at this critical juncture has been dignified without being unduly inflated, calm without being passive, and powerfully impres sive without making any fuss. We are still preparing for any eventuality that may lead us into a war. The Rupert ram has been launched and is being made fit for sea. The Himalaya is to be instantly refitted and made ready for sea at Devonport dockyard by July 6. All naval pensioners under 55 years of age have received notice to hold themselves in readiness for active service, and permission, with special advantages, has been given to all pensioners under 45 to join the naval reserve. Preparations have also been made for dispatching to Malta medical stores for 5000 men over and above the full strength of the squadron now cruising in the Mediterranean. Other preparations are in quiet force, all tending to show that there is still every probability of war arising before long.

THE COMMERCIAL DISTRESS continues to be more palpable every succeeding week, and in many quarters fears are expressed that we have a very serious immediate future before us. On all sides schemes of reform, retrenchment and additional efforts are visible, being rendered absolutely necessary by the exceedingly hard times which have overtaken us. Already there is a good deal of quiet privation in the humbler ranks of our towns' populations, and as the winter approaches I am afraid much suffering will come about. It is not one trade, or a few industries that are badly employed, but a paralysis which has levelled all the industrial energies of the nation—I might say of the whole world. The Hull Mall Gazette, in an excellent article, written I opine by Mr. W. R. Greg, says: "The three years of distress have cured effectually the undue conversion of floating into fixed capital. They have purged away most of the abuses and excesses of credit; but they have not yet brought down the cost of production to a point which tempts capital by reason of cheapness to rely upon the prompt and effectual response of consumption. Still, rapid progress is being made in that direction. The losses of manufacturers, merchants, dealers and tradespeople have become so general, and the lessened dividends upon all capital invested in jointstock companies have so seriously impaired large classes of incomes, that the process of correction is now at work with accelerated force. During the present year all attempts of trade unions to rests reduction of wages have been more or less defeated, and the decrease of employment has enabled the masters to get rid of the less efficient hands, and thus samend somewhat the circumstances of production. Emigration to the United States and Canada is almost stopped, and steamers from New York bring to Liverpool weekly hundreds of artisans in search of work in the old country."

\*\*CUICK RAILWAY WAGON BUILDING.\*\*

The Engineer says: "At a recent meeting of continues to be more palpable every succeeding week, and in many quarters fears are ex-QUICK RAILWAY WAGON BUILDING

QUICK RAILWAY WAGON BUILDING.

The Engineer says: "At a recent meeting of the Civil and Mechanical Engineers' Society Mr. R. M. Bancroft, of the engineer staff, Great Northern Railway, and senior vice president of the society, gave the following particulars of a covered goods van, which was made complete by the Ashbury Rolling Stock Construction Company, in one working day: All the ironwork, bolts, axle boxes, wheels and axles were manufactured from pig iron, and the wood work cut out of the log and deals; 4 toos 5 cwt. of pig iron, 4 logs of teak wood and 26 deals were the materials from which the work was done. The work commenced at 7-15 a. m. and was finished at 6-35 p. m.—11 hours 20 minutes—and the van quite complete, was then loaded with ordinary merchandise and forwarded to London by 7 o'clock ordinary goods train. It was unloaded next morning at King's Cross station, and then conveyed to the Exhibition building in South Kensington, where it arrived by 10 o'clock in the forenoon, or within 27 hours of the time when the work was first begun."

This, to put it very mildly, was a truly wonderful feat, but the standing of its narrator is a full warranty of its accuracy. The construction of the van body I can quite "see," so to speak, but I confess that I am rather sceptical as to the wheels. They must have been under the van in good time, and then the run in rough new journals to London—200 miles—at high speed—but no matter, I cave in!

COLLI

The depreciation of wages in all trades is a matter of much and earnest discussion just now in certain quarters. The men are beginning to see that combination cannot contend against certain circumstances, and that after all the laws of supply and demand "rule the roost."

The newspapers are filled with correspondence in the state the appeariem but most reconstructions. The newspapers are filled with correspondence on both sides the question, but most people are content to "let things slide," in the full assuron both sides the question, our most people are content to "let things slide," in the full assurance that we are gradually descending the scale toward a period of moderate prices. The colliers are, perhaps, most disconcerted at the turn affairs have taken, and some of them appear hugely discontented now that they are unable to feed their grayhounds with beetsteaks and mutton-chops. I do not mean to say that all the miners are of that class, but the genus is a large order, and very despicable in some of its characteristics. Some of the miners are carnest, clever, calculating men, and these soon make their marks. One of them, in writing to the Sheffield Daily Telegraph the other day, quoted the following sapient axiom, which is, I think, immensely amusing:

No quantity of pounds shall make I stone;

Me quantity of pounds shall make 1 stone; Twice that amount shall make no quarter; No amount - f quarters shall be called 1 cwt; But 26 cwts, shall be reckoned 1 ton.

This, he says, used to be the rule of the masters, and I regret to say there is but-too much trath in the assertion. In some districts the coal owners were guilty of the most out-rageous oppression and the poor miners were held merely as so many cattle.

A GREAT TRADES UNION

The twenty fifth annual report of the Amalga The twenty-fifth annual report of the Amaigamated Society of Engineers, which has branches in all parts of Great Britain, the colonies and in America, has just been issued and is, in a condensed form, worthy a perusal: At the close of 1874, there were on the books 43,150 members, and at the end of 1875, 44,033, a difference of and at the end of 1875, 44,032, a difference of 882 in favor of the society. After allowing for all deaths and exclusions, the increase in the number of members during 1874 was 768, or 114 less than 1sst year. The income during the year from all sources amounted to £130,024.

2/34, against £118,556. 4/14 in the preceding

May 20th, 1876.

year, an increase of £1,467. 18/1½. Expenditure, however, had also increased to the extent of £13,382. 1/1½, as £80,483. 14/10½ in 1874 had swelled out to £94,371. 16/ in 1875. The chief swelled out to 203,341. 10/11 1876. The oner cause of this increased outlay was a material difference in the state of trade throughout the society in 1875 as compared with 1874, and thus it would be found that against £19,344. 7/11 expended on donation or out-of-work benefit in 1874, no less than £28,500. 6/was expended in 1875, a difference against the funds of £9155, 18/1. Frequent perty trade disputes had caused in 1875, a difference against the funds of £9155, 18/1. Frequent pecty trade disputes had caused an increased outlay in contingent benefit to the extent of £1299. 1/3. Despite, however, of an increased expenditure, consequent upon a bad industrial and unsanitary year, the bolance in favor of the society had been advanced from £238,989, 10/9½, at which it stood at the close of 1874, to £264,641, 12/1, an increase of £25,652, 6/3½.

THE BOARD OF TRADE RETURNS

made up to the end of May, have just been is sued, and show a general decrease, except in the quantity of iron and steel sent off during the month, as compared with the same period of 1875. I suspect that the increase has almost wholly been from South Wales and Monmouthshire. The increase has been in cast or wrought pig, and, in a slight degree, in rail-road iron. There was a much larger expor-tation of coal, coke and patent fuel—the extra quantity over the same month of last year being 305,077 tons—chiefly for Russia, Germany, France, Italy and India. Some of the figures

Hardware and Cuttery.
Month ended 31st May.

	Month	ended 318	
		Valu 1875.	1876.
		£	£
To Russia		. 9,765	13,572
Germanv		. 21,491	19,517
Holland		. 9,196	9,986
France			11,414
Spain and Canaries		. 7.282	11,671
Spain and Canaries United States		. 35,738	24,439
Spanish West India I	slands	. 8,816	4,926
Brazil		25,411	21,664
Argentine Republic			7,281
British North Americ		38,019	18,749
British North Americ British India		24.417	25,827
Australia		51,332	30,653
other countries		. 94,195	84,614
	-		
Total		855,334	808,413
Iron a	nd Steel.	2 2 44	
		ided 31st 1	
	375		1876.
Quantity.	Value.	Quantity	
Tons.	£	Tons.	£
Pig iron 86,796 Bar, angle, bolt and	334,438	97,867	811,236
rod 24,427	248,113	17,935	157,583
RETHFORG 49,290	507,766	50,299	453,452
Wire 3,257	64,673	3,418	58,978
Boiler, armor		-,	
plates, &c 16.506	279,716	14,946	222,427
Tin plates 10,292	290,578	12,112	273,428
Cast or Wrought, 22,775	398,716	29,430	119,500
Old for remanu-	m 004	0.400	40.000
facture 1.480	7,201	8,427	13,307
Unwrought steel. 2,965	109,393	2,605	94,647
Manufactures of		4.04	
steel and iron 1,067	84,724	1,017	78,373
Total218,863	9 995 199	999 056	100 690 6
Of railroad iron the			ese:
	May,	May,	5 mos.
	1878	1876.	1876.
Railroad, of all Sorts. To Russia. Sweden and Norway.	Tons.	Tons.	Tons.
To Russia	9.256	6,059	8,913
Sweden and Norway.	6,705	7,322	22,386
Denmark	890	1.256	1,339
Germany		289	1,502
Holland	1.336	105	170
Belgium	24		140
Belgium	22	6	30
Spain and Canaries	1.025	1,815	5,850
		3,617	14,461
ItalyTurkeyEgypt	12	1	. 71
Egypt	190	-	136
Egypt United States	1 283	2	96
Rengil	776	1,046	
Pern	312	54	1,709
Chili	9 699	891	1,565
Peru Chili British N. America	19 999	8.693	20,593
" India	1 907	7,061	20,509
Australia	6 974	2,683	12,611
Other countries	8,327	9,400	27,125
Total	49,298	50,299	144,728

SCOTCH PIG IRON.

There has been no alteration in this respect during the week, except a fairly good increase in the quantity of pig shipped. Prices are very quiet, with a steady business doing.

Writing from Glasgow, June 10th, Messrs. James Watson & Co., said: "The tone of the warrant market has been quieter this week, the price being steady from 57/9 to 57/9, closing sellers at 57/7½, cash. Shipments last week were 11,019 tons, against \$708 tons in the corresponding week of 1875." We quote:

1cobonain2	MCCTT OF	TOTOS	me que	
STREET MADE			No. 1	. No. 3.
G. M. B., at	Glasgow			26/
Gartsherrie,	64		65/6	
Coltness.	-6		69/	88/
Summerlee,	9.6		62/6	
Langloan,	8.0		67/6	58/
Carnbroe.	4.6		61/	57/6
Calder, at Po				57/6
Hengarnock	, at Ardr	ossan		
Eginton.	64		57/	
Dalmellingto	m, 64		57/0	
Shotts, at Le	ith		68/	00/
Wannoil of 1	loness		MB /4	B. B. B.

SHIPBUILDING FOR THE COLONIES. On Friday evening a number of gentlemen connected with our antipodean colonies dined together at Giasgow, under the presidency of Sir James Fergusson, late Governor of New Sir James Fergusson, late Governor of New Zealand. In the course of a discussion on shipbuilding it was stated that there are now not fewer than 16 steamers in course of construction on the Clyde for our colonies. Mr. Denny, a shipbuilder, of Dumbarton, in the course of the discussion which followed, said the present enormous depression of the shipbuilding trade arose from the fact that during the last ten years great advances had been mining trace arose from the fact that during the last ten years great advances had been made in the mode of construction. A ship of given gross connege and speed now carried exactly double the cargo it used to. He thought the demand for the colonies would, however, furnish such a demand as would enable to tide over the bad times well. Two thirds of the tonage now building in his own yard was for New nage now building in his own yard was for New Zealand, and he believed that other favors were likely to be forthcoming

THE CLEVELAND IRON TRADE The following are the returns of tht Cleve-land Iron-masters' Association, issued June 10th. They are worthy of perusal, as the dis-trict is highly and increasingly productive and

Make of Pig Iron.

Month ending 31st May, 1876	186,428
Increase upon April, 1878	10,042
Shipments Foreign of Plg Iron from the Middlesborough.	Port of
Month ending 31st May, 1878 Corresponding month last year	36,753 29,345
Increase upon May, 1875	14,408
Shipments Coastwise of Pia Iron from Middlesborough.	Port of
Month ending 31st May, 1876 Corresponding month last year	
Increase upon May, 1875	10,090
30th April, 1876	113,628 115,867 2,239
Stock in Warrant Stores.	

TRADES OF SHEFFIELD

Preliminarily, I may remark that Mr. Joseph Slagg, one of the managing-directors of William Jessop & Company (Limited), has been elected chairman of the company, in place of the late Mr. Balstone, who committed suicide, owing, as was stated, to heavy stock exchange losses. I believe Mr. Slagg is pretty well known on your side of the Atlantic, he having been connected with the concern for many years. There has been nothing doing in business during the past week, but owing to the practical settlement of the South York-hire miners' strike on Friday last, there is a feeling of rather more past week, but owing to the practical settlement of the South Yorkshire miners' strike on Friday last, there is a feeling of rather more confidence in the future of the iron trade, it being supposed that with cheaper fuel prices may be so reduced as to attract customers who are now debarred from buying iron by the high prices currently quoted. Pig iron is easier on the week from the same reason, and is further slightly depreciated in value by the fact that stocks are increasing in the North of England, Scotland and other iron making districts. Foundry numbers are perhaps in best request, but they are by no means called for in quantities equal to the production, even on its present in inted scale. Several of the district blast furnaces are out of blast. One or two are being blown up with dynamite, for the purpose of removing the slag, and one or two others, the two at the Thorncliffe Works included, will be blown in again now that the miners' dispute has been disposed of.

The cutlery trades are admittedly growing worse than they have yet been. I hear that

has been disposed of.

The cutiery trades are admittedly growing worse than they have yet been. I hear that one of the largest houses will not resume running its engines, after setting down for Whitsuntide, until June 20th. This is about the foremost firm in the American trade. They have never before heen so hedly expensed. have never before been so badly engaged. Rodgers & Sons are nearly in as unpromising a

CHARLES CAMMELL & CO., LIMITED.

One of the chief subjects of conversation in business circles here this week has been the rebusiness circles here this week has been the remarkably good report issued on Saturday last by the directors of Charles Cammell & Co., limited, to the shareholders. I may say that the nominal capital of the company is £1,000,000, of which £300,000 have been paid up. The company's properties are the Cyclops Steel and Iron Works, including the Howard and Agenovia Works, Sheffield, which have an area of 10 acres 3 roods; the Grimesthorpe Steel Works, Sheffield, area 20 acres 3 roods; the Yorkshire Steel and Iron Works, Fenistone, area 25 acres; and the Oaks colleries, Barneley, with a coal field of an area of 1200 acres of the 9 ft. or Barnsley seam. The dividend recommended by field of an area of 1200 acres of the 9 ft, or Barnsley seam. The dividend recommended by the directors is this year 10 per cent., as against 7½ per cent, last year, the year's profits having been £106,869, as compared with £68,039 in the preceding year. The directors state that notwithstanding the great depression which has existed throughout the steel and iron trades during the veer every which the seconds now the seconds are the seconds and the seconds are which the seconds are the seconds and the seconds are the seconds are which the seconds are the second are the seconds are the second are existed throughout the steel and iron trades during the year over which the accounts now presented extend, they are glad to state that, with one or two minor exceptions, the several departments have been comparatively well employed, and each has contributed toward the profit realized. The company has been fortunate in having executed during the year several important contracts for iron and steel which had been made some time previous. £20,000 is recommended to be added to the reserve fund. "Reductions in wages," the report continues, "have been made in the various manufacturing departments of the company's business. the "have been made in the various manufacturing departments of the company's business, the present depressed condition of trade having been readily admitted by the workmen, with the exception of those employed in the collieries." It is generally admitted that such a report as this is of an encouraging nature to the trade as a whole, although it is well enough known that Cammell & Co. have special departments—armor plate manufacture to wit—which are the source of exceptional activity and profit. The report of John Brown & Co.. limited, the other leading local coucern, will be issued, I believe, in about a week.

NATIONAL CONFERENCE OF IRON WORKERS.

NATIONAL CONFERENCE OF IRON WORKERS.

The annual conference of the National Association of Iron Workers was commenced at Sueffield on Tuesday afternoon, Mr. Ancutt, president of the Association, being in the chair. There were 50 delegates present from various parts of the country, their constituents being and to number from 25,000 to 30,000. A rote of conductance was a paramously present with the parts of the country, their constituents being said to number from 25,000 to 30,000. A vote of condolence was unanimously passed with the widow of the late Mr. John Kane, formerly the secretary of the Association, and it was resolved to subscribe £500 for the purpose of purchasing su annuity for Mrs. Kane, the £500 given by the North of England iron-masters being devoted to the same end. On Wednesday the conference re-elected Mr. Aucutt as president of the Association, and elected Mr. Edward Trow general secretary. It was resolved to hold the conferences every two years instead of every year, as at present, and to issue the Ironworker's Journal monthly instead of fortnightly. The chief feature of the day's proceedings was the adoption of a resolution to centralize the whole of the funds of the Association in the names of the general trustees. clation in the names of the general trustees.
On the last day's sitting Mrs. Kane addressed the delegates in a most able manner, telling them the only enemy they had to fear was drink! This, I think, was courageous, to say

BIRMINGHAM AND DISTRICTS

Here, as in other districts, Whitsuntide has been a long holiday, and on a resumption it is being found that matters are even worse than they were a fortnight ago. In the iron trade there is in reality very little business being done, but there are, of course, a few forced sales, both by concessions in prices and by the necessity for purchasing for specific purposes. Prices are nominally wholly unchanged, but there is no doubt whatever, from what I hear, that makers are making offers up many quarters. that makers are making offers in many quarters at several shillings under their quoted prices. The shipping trade for bardware is very rapidly declining. Edge tools, brass foundry and raiway rolling stock are, perhaps, selling better than anything else.

Last week the iron exports were principally to Sundswall, Scderbaum, and one or two Mediterranean ports. The quantity was small, amounting to 1513 tons from Cardiff, and 975 tons from Newport. It is said that at Dowlais a new steel rail mill is to be erected, but the rumor wants continuation, especially under present conditions of trade. South Wales bars are being sent into other than local markets at £6.5/ to £6.10/per ton. Think of that, my friends, and wonder.

THE METAL MARKETS

THE METAL MARKETS are still very quiet, in part owing to the unsettled condition of politics.

The Mining Journal remarks: "Copper,—
The market opened very quiet at the commencement of the week, Chill bars, g. o. b., being quoted £77 to £77. 10/, ordinary cash terms. The charters from Chill during the last fortigith in May having been appounced terms. The charters from Chili during the last fortnight in May having been announced to be only 1100 tons of bars, of which 1050 were for this country and 50 tons for the Continent, the market assumed a firmer appearance, and all descriptions of copper were steadily held at current quotations, but buyers not being willing to launch out upon the favorable announcement of small charters actual business was very ment of small charters, actual business was very limited. Up to Thursday last this continued to be the condition of the market, but upon that day the firmness which had characterized sel-lers gave way, and efforts were made to quit holdings in Chili bars and Australian copper. The amouncement of a further sale of 1800

tons of Wallaroo copper on the 27th inst. by pub-lic auction tended rather to depress the market, as it is surmised that the whole of the last sale lic auction tended rainer to depress the market, as it is surmised that the whole of the last sale has not yet found its way into consumption, and to day's market is very quiet indeed, Chilibars, g. o. b., being quoted £77 to £77. 10'; English tough, £83 to £84; best selected, £84 to £85; strong sheets, £89 to £90; India, 4 by 4, £88; Australian copper, £82. 10', Lead.— The market continues to be very flat, and good soft English pig is obtainable at £21. 5', and soft English pig is obtainable at £21. 5', and soft English hard spelter rules about £18. Zinc.— The demand for Silesian is sufficient to support the market, which is steady at £23. 10', and English hard spelter rules about £18. Zinc.— During the week 120 tons of London rolled was offered at public auction, of which 80 tons found buyers at £27. 10', or a reduction of 10' upon the previous sale. Quicksilver.—The market continues quiet, and £9 has been accepted to day. Tin.—This metal has been quiet during the week. The speculative feeling which was apparent some little time ago has completely subsided, and is not likely to be re newed—the fallacy of attempting to raise the value of a metal which is encumbered with a burdensome stock in days of such general stagnation having been proved. Straits tin has been offered to-day, both on the spot and for arrival, at £74, but without finding buyers. The probability is that in the absence of speculation lower prices will shortly ensue. Tin Plates. arrival, at £74, but without inding buyers. The probability is that in the absence of speculation lower prices will shortly ensue. Tin Plates.—
There is no improvement to record. The demand is still very sluggish; and, although the make is restricted as much as possible, stocks are on the increase, and prices decline. I. C. coke plates are quoted 18/ to 19/ per box.

The following are the latest Liverpool prices:

Iron: t. o. b. in Liverpool, per ton. Tin Plates: f. o. b. in Liverpool, per box. 
 Copper: Delivered in Liverpool, per ton.

 Bolt and Sheathing.
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#### HARDWARE AT THE CENTENNIAL.

Machinery Hall.

PECK BROTHERS & COMPANY. The most complete assortment of racking,

globe and lock cocks, such as are dealt in extensively by the hardware trade, that we have seen at the Centennial, is exhibited by Peck Brothers & Co., New Haven, Conn., and No. 73 Beekman street, New York. These goods are shown in great variety. Their lock cocks are all provided with the improved small key, recently introduced by this house, and which we are informed has become very popular. In cocks for water coolers they show an immense variety; we counted in plated goods alone of this class over 40 patterns. They also exhibit some very handsome double bath cocks, of which nine distinct patterns are shown; some of these are provided with gold-lined jewel holders, others with fancy acorn tops, and all of them are conspicuous for elegance of design and superior workmanship and finish. We also noticed in their case 46 patterns of basin cocks in nickel, silver plate and brass, and a complete assortment of chain stays to match. Beside the brass cocks, already referred to, they exhibit a large variety of lager teer cocks of the heavy pattern required for this trade. These goods, which are a specialty with this house, are shown in 15 patterns. They also exhibit hose pipes and couplings, compression, plug, plain and screw tips, with hose sprinklers and couplings, of all sizes; some handsome beer pumps, a full line of hydrant cocks, steam fitters' and brewers' goods, butlers' pantry cocks in large variety, with and without glass bolders. This house also makes a specialty of corporation stops, and they exhibit these goods in all the various patterns required by different cities throughout the country. They are shown with and without eel traps, and in size 1/2 to 2 inches diameter. Some idea of the extent and detail that Messrs. Peck Bros. & Co. exhibit in their case 1000 different patterns of cocks. The goods

THE HARDY PATENT PICK CO. (LIMITED), Sheffield, England, exhibit for the first time in this country a very large assortment of cast steel picks, with interchangeable handles, for mining, quarry, railroad and other purposes. They also exhibit steel hammers, sledges, spike mauls, &c., all of which are arranged for use on the same handle that is supplied with the pick. We take the following from their circular, showing the advantages claimed for these special cast steel, will attack the hardest materials usually found in mining, without yielding or the ordinary pick, and the blow more solid. 2. Portability. - One handle only being required for any number of picks, and this need seldom be brought out of the mine, unless used as a upon their handles. No amount of work can loosen them, or move the tool out of right angles with its handle. 4. Strength .- Both for cutting and "prizing" they are much stronger in extensive use, they are found to last four or ordinary picks require re-steeling every six to the trade. months, or oftener. The handles are of the choicest American bickory, and are protected without the handles; thus they take up less and gold. The panels on which the saws are

room, and are more handy to the smith, and no handles are scorched or burnt. Contractors will find them very convenient for transport and for locking up when not in use, as detached, they occupy little space. Economy.-One pick does the work of four or five ordinary picks before becoming dull. Two or three picks (which may be of different weights) and one handle are sufficient outfit for a collier, where eight or ten ordinary picks would be required." The picks on exhibition are full polished. The sockets for the handles are made of malleable iron, samples of which are shown bent under great pressure, and free from fracture. Surmounting this exhibit, which is tastefully arranged, is the motto "The pick is mightier than the sword."

#### HOOPES & TOWNSEND,

Philadelphia, make one of the most interesting exhibits of bolts, nuts, washers and kindred goods that is to be found at the Centennial. The following description of their pavilion in Machinery Hall is an extract from the New York Tribune of recent date: "A square pavilion of neat and tasteful design, constructed throughout of polished walnut, incloses a floor space of over 300 square feet, and has a hight of 18 feet. To its sides are attached bolts and nuts of every conceivable form and size; irons for railroad car trucks; forgings, etc., for buildings, flat link chain for elevators, etc., all artistically arranged so as to strike the eye in the most pleasing manner. On the floor of the space (which is covered with a rich velvet carpet) are a series of bins filled with the varied manufactures of this firm, in order that they may be handled and critically examined by those interested in this class of goods. The design of one of the walls of this inclosure is worthy of special mention. The initial letters of the thirteen original States form an arch. These letters are formed with bolts and the arch is outlined with a flat link elevator chain. The keystone of the arch is formed of boiler rivets. The keystone is the copyrighted trade-mark adopted for these rivets, and the whole form a design at once appropriate and effective." The display of rivets is very large, including cone head, button head, countersunk button head, countersunk flat head, etc., from No. 10 to 11/2 inch. They also show taps and dies, ear irons, belt bolts, railroad track bolts and bolts in the following varieties: square bead, hexagon head, button head, button head square countersunk, button head square under, blank bolts, bolt ends, etc.; rods for roofs and bridges, and swivels for 1/4 to 31/4 inch rods, pipe swivels, building irons, wood screws, set screws, patch bolts, elevator chains, forged nuts, cold pressed nuts, both square and hexagon, from 1/4 to 2 inch. They also exhibit sections of boiler plate showing difference between hand and machine riveting. A bar of iron 1% inches thick, punched cold with a 7-16 punch; the length of the punching, which is also shown, is compressed to barely % inch. This is one of the most remarkable exhibits of cold punching we have seen.

#### CHARLES PARKER,

Meriden, Conn., exhibits a large assortment of parallel vises; he also shows a full line of "Hall's sudden grip vise," which was awarded a certificate at the Vienna Exposition in 1873.

RUMSEY & CO.,

Seneca Falls, N. Y., exhibit pumps of almost every conceivable description in immense variety. They show about 300 styles of common cistern and force pumps; a large variety of brass single and double action house force pumps; an assortment of steam boiler feed pumps; ? sizes of hydraulic rams in Iron and brass; one hydraulic ram in operation; a full line of fire pumps for factories, mills, &c.; 10 varieties of ship pumps, from the smallest size horizontal pump for deck use to the largest ships' main bilge pump, with two balance wheels. They also exhibit a variety of rotary force pumps for hand or power; one rotary force pump in operation, throwing a 4 inch of this business will be inferred from the fact stream; eight sizes of centrifugal pumps, one of which is in operation, throwing a 6 inch stream; eight varieties and sizes of engine well are very tastefully arranged, and are, all of pumps, combining the properties of a lifting them, specimens taken from their regular force pump and an ordinary well pump. They further show a large assortment of closed top iron pitcher pumps, which are among the leading specialties manufactured by this house; a variety of brass molasses or hot water pumps, which find a market in South America and the West India Islands; a number of styles of well and force pumps for attaching to wind-mills; a very handsome line of mounted force pumps for house use in brass and iron; drive weil points and all the necessary appliances. Beside their immense assortment of pumps, they extools: "1. Effectiveness.—The picks being of a hibit their hand corn shellers, which resemble in appearance the well known Burrell corn sheller; farm and factory bells in ten different breaking; the cut is much keener than that of sizes, from 40 to 1200 pounds. In another department of Machinery Hall they exhibit a variety of fire engines, centrifugal pumps for use in tanneries, mines, &c. All the goods exhibited by this house are well finished, and are walking stick. 3. Firmness.-Of the picks fair specimens of the regular goods dispensed to the trade.

THE BAILEY WRINGING MACHINE CO., New York, show a handsome assortment of Simpson's adjustable parallel vises. Of these than the common pick. 5. Durability.—In the goods fifteen different sizes are on exhibition, mines of Great Britain, where these picks are among which we notice three small sizes for among which we notice three small sizes for fine work, finished in nickel plate. All the five years without needing repairs, while the others are shown in the ordinary finish known

E. M. BOYNTON.

sole proprietor of the genuine lightning saws, from wear or injury, where the ordinary pick No. 80 Beckman street, New York, exhibits a handles usually wear or break by the mallcable large variety of saws, files, etc., in a very tasteiron socket, which is a fixture upon the handle. ful and attractive manner. His display is situ-6. Convenience.-In every way, the care and ated near the great Corliss engine, and the carriage of so many tools and handles are saved, goods are shown on four sides of a square and especially in sharpening, which is done at structure, each side representing an immense the smith's forge, in the ordinary manner, but picture frame, with heavy moldings in walnut

PRICES FOR JUNE Steamer, Broken, Egg. PENNSTLVANIA COAL CO., at Wechawken, N. J. Pittston ...... 4.70 4.80 4.90 5.00 5.60 4.90 Lackawanna..... 4.70 4.80 4.90 5.00 5.60 4.90 LEHIGH AND WILKES-BARRE COAL CO., f.o.b. at Port Johnson, N. J. Old Company's Summit. [S-20] ... [S-00] S-00] S-60 4-90 Honey-Brook Lehigh ... [S-20] ... [S-00] S-00] S-60 4-90 Wilkes-Barre ... 470, 4'80, 4'90, 5'10 8'-70, 4'90 Plymouth Red Ash ... 4'90, 5'10 8'-70, 4'90 PHILADELPHIA AND READING COAL AND IRON CO., at Port Richmond, Philadelphia. Hard White Ash Coal. 4 35 4 45 4 55 4 4 65 5 25 4 45
Free Burning White Ash
Coal. 4 35 4 45 4 55 4 65 5 25 4 45
Schuylkill Red Ash 4 75 5 25 4 45
Shanokin 4 85 5 36 4 45
Lorberry 5 45 5 45 5 45 4 5 0
Lykens Valley 5 5 90 5 90 5 90 4 9

DELAWARE, LACKAWANNA AND WESTERN, at Hobo-ken, N. J. Scranton ...... 4 '70 4 '80 4 '90 5 '00 5 '60 1 '90

Deliverable at the Williamsburgh Yard.

PREIGHTS-PER TON OF 2240 LBs

Ронтя.	From Elizabethport, Port Johnson, South Amboy, Hoboken & Weehawk'n.	From Philadelphia,	From Baltimore.	From Georgetown.
Augusta, Me		****	\$1.75	
Albany			\$1.40	****
Bangor, Me	\$1.00		2.00	****
Bangor, Me	1.00	****	1.20	\$1.20
Baltimore	100	1:30	1:45	1:60
Bridgeport, Ct	-70	1951	1.40	1.40
Bristol, R. I.	*85	erte		****
Bridgeport, Ct Bristol, R. I. Cambridgep't, Mass. Derby Dighton East Cambridge	1.00		0000	
Dighton	****	****	1.40	1.30
East Cambridge	*1.00	1.25		
East CambridgeFall River	.80	1.25	1.40	1.40
Hackensack		****	****	****
Hallowell, Me				
Hoboken	'40		1.30	1.25
Hudson	40		1.20	1.40
Jersey City Lynn, Mass	1.10		1 20	1.40
Middletown	190		****	
Mystic			1.20	
Newark	-85		1.50	1:40
Newbaryport			1.65	1.70
New Haven	'65		1.40	1.40
New London	'80 '85	****	1.40	1.40
New York	-40	70	1-25	1.30
Norwalk	10		1.40	****
Norwich	-90	****	1.45	****
Pawtucket Pbiladelphia	-90	****	90	****
Portland	90		1.45	1.50
Portland	1.10	::	1.60	1.70
Providence	-80	1.25	1.40	1:40
Rockland	90			1.40
Rockport,	****			
Buco	1.00	90.5	****	100
Sag Harbor	1.00	****	1.60	1.60
Saiisbury Pt., Mass.	200			1.00
Salem, Mass. Salisbury Pt., Mass. Stamford	-65			****
Navbrook	40	****	****	
Stonington	1 1	****		
Troy	-65			
Troy. Warren, R. I.	185		1.45	1:00
Wareham	0000		1.40	1.60
Weymouth				1.25

\*3c. per bridge extra. † And Sound Towing. Harbor Freights, 40 cents.

#### IMPORTATIONS.

Of Hardware, Iron, Steel and Metals into the Port of New York, for the week ending June 27, 1876 :

Steel.

Metals.

Naylor & Co.
Bars, 2840
Phelps, Dodge & Co.
Bundles, 279
Paulding, Kemble & Co.
Pieces, 2 Boker Hermann & Co. Packages, 15 Mdsc. pkgs., 11 Biumenthal I. & A. Packages, 4
Curley Bros.
Mdsc. pkgs., 1
Fessenden S. H.
Packages, 17 Sampson G. G.
Pig. tons, 200
Wallace W. H.
Boller flues, 636 Order. Pig, tons, 200 Bars, 402 Falkages, 17
Fuller Bros.
Mdsc. pkgs., 3
Friedmann & Lauterjung,
Mdsc. pkgs., 4
Friederichs R. & Co.
Cases, 6 Steel.
Haigh J. Lloyd,
Bundlee, 247
Naylor Thos.
Packages, 7
Naylor & Co.
Axles, cast, 12
Proseer Thoe. & Sons,
Mdee. pkgs., 1
Sulzbacher, Heymann,
Wolff & Co.
Packages, 457
Order. Friedericha R. & Co.
Casea, 6
Field Alfred & Co.
Chains, cks., 3
Hiddek A. H.
Chains, pkgs., 3
Jordan W. F.
Chains, eks., 16
Livingstone W. & F.
Grindstones, 1042
Moore's J. P. Sons,
Måse, pkgs., 8
Schoverling & Daly,
Packages, 5 Order. Bundles, 189 Packages, 5
Mdse. pkgs., 3
Van Wart & McCoy,
Mdse. pkgs., 3
Willett & Hamlin,
Nalls, cks., 13
Wiebusch & Hilger Mfg.

Hardware.

Agostini Jos.
Scrap, copper, bxs., 4
Byrne Joseph & Co.
Tin plates, bxs., 300
Dickerson, Van Dusen & Dickerson, Van Dusen & Co.
Tin. ingots, 300
Froutell F. & Sens,
Scrap, zinc, cks., 2
Haxtum B.
Lead, pigs, 1799
Montell F. T. & Sons,
Scrap, brass, tcs., 9:
hhds., 6; bbls., 7;
bxs., 6; cks., 6
Scrap, copper, tcs., 2; Ironware, pkgs., 5 Western File Co. Cases, 1 Walker & Renwick, Guns, cs., 10 Guns, cks., 12 Order. Wire rods, cells, 801 Iron. Brown, Shipley & Co. Bars, 2667 Brown Bros. & Co. Pig, pcs., 2434 Bars, 2345

bxs., 6; cks., 6 Bcrap, copper, tcs., 2; hhds., 1; bbls., 4; cks., 2; pcs., 2 Bcrap luad, tcs., 3; cks., 1 Scrap, metal, cs., 46 Naylor & Co. Tin plates, bxs., 759 Phelps, Dodge & Co. Zinc, cks., 100 Order. Champin H.
Pig. lots, 1
Dickerson, Van Dusen & Dickerson, Van Dusen & Co.
Shest, pkgs., 50
Gomez, Pearsail & Co.
Scrap, tons, 4
Mitander Nils,
Bars, 347
Nail rods, bdls., 1459
Coile, 256
Bessemer, blooms,
685 Order.
Tin plates, bxs., 5347
Terne plates, bxs.,
1363
Lead, pigs, 1311 1963 Lead, pigs, 1311 Tin, bxs., 601 Without Bills of Lading. Tiu, elabs, 1934 Lead, pigs, 714 Lead, cs., 14 Lead, cks., 24 685 Marvel Wm. D. Ore, tone, 250

OLD METALS. PAPER STOCK, &c.

Trade in Old Metals, Rags and Paper Stock still continues dull, and we see no prospect of business soon reviving. In Old Metals the supply is greater than the demand, and stocks are accumulating rapidly. Copper is quiet, and Composition Yellow Metal and Lead are all in a weak condition. Iron is not wanted at any price. Brass is selling slowly at drooping prices. In the Rag and Paper Stock markets there is very little doing, and prices remain nominally unchanged. We quote the following as the current purchasing rates;

ing as the current purchasing rates;

Old Metals.—Copper, 15c. @ 16c. per lb.; Yellow Metal, 10c.; Brass, 9c.; Composition, heavy, 10c. @ 11c.; Less. solid, 5%c.; Tes Lead, 5c.; Zinc, 4c. @ 4½c.; Pewter. No. 1, 13c.; do., No. 2, 8c. @ 10c.; Spelter. 5½c., Wrought Iron, \$21 per ton; Light do., \$12 per ton; Stove Plate, \$9 per ton; Machinery, do., \$12 per ton; Burnt Iron, \$6 per ton.

Rags. &c.—Lanvas, Linen, 4%c. @ 5%c.; do. Cotton. No. 1, 5%c.; No. 2, 2%c.; White, No. 1, 5c.; No. 2, 4c.; Colored, do., 2c.; Mixed, W\*olen, 2c. @ 3c.; 8oft, do., 5c. @ 5%c.; Gunny Bagging, 1½c.; Jute Butts. 1½c. @ 2c.; Kentucky Bagging, 3c.; Book Stock, 3c.; Newspaper Stock, 2%c.; Waste Paper and Scraps, 1½c.; Kentucky Bale Rope, 4c.; Oakur Juni., No. 1, 4½ @ 5c.; do. No. 2, 3c.; Tarred Shaking, 1c. @ 1½c.; Grass Rope, 2%c. @ 3c.

#### PITTSBURGH.

Office of The Iron Age, 14 Fifth Avenue, } PITTSBURGH, June 27, 1876. } PIG IRON.—The market hereabout continues

to be dull, and in a general way devoid of any thing particularly new or important. As but very few of the puddling furnaces are in blast, the consumption of Pig is very much reduced, and the probability is that there will not be much wanted until the latter part of next month, as there is usually a pretty general shutting down during the first half of July to take stock and make repairs, and there is no disposition manifested to anticipate future wants. The sales reported during the past week did not aggregate more than 800 tons, with the exception of two lots of 500 tons each, which were sold in first hands. Prices unchanged; \$21.50 to \$22.50, 4 mos., for Mill Irons and \$23 to \$25 for Nos. 2 and 1 Coal Smelted Foundry, and \$25 to \$28 for same grades of Hanging Rock Charcoal.

MANUPACTURED IRON-Continues dull, and no immediate improvement is expected; buyers generally bought pretty freely before the advance, and those who have not much stock are buying only as immediate necessities require, being apprehensive that the combination rates cannot be maintained. In this, however, they are almost certain to be disappointed, as the combination is growing stronger instead of weakening, and the main object of the association is to keep up prices sufficiently to afford a margin for profit, and prevent the ruinous cutting so prevalent before it was organized. Quotations may be given at 2:30c. to 2:50c., 60 days, for Bars, according to size of order.

NAILS.-Some of our factories are working up to their full capacity, having sold considerably ahead of their production prior to the advance, while others are not pressed; however, notwithstanding orders have slackened off, business is all that can be expected, and prices are firm but unchanged. We continue to quote at \$2.85, 60 days, for less than 200 kegs, and \$2.75, 60 days, for orders for 200 kegs and upward.

STEEL.-The Steel mills are all in operation, some of them working full. There is a steady demand for all the leading sizes and specialties, the domestic having almost entirely sup-planted the foreign article. About the only complaint is in regard to prices, which are being cut pretty close; but this is the case in al-

most everything. SCRAP.—There is very little doing in Scrap Iron, and prices are weak; but as stocks are light they are no lower. No. 1 Wrought nomi nal at \$27 @ \$28, selling by desiers to mills Scrap Steel is in fair demand, but the inquiry is chiefly for small lots, while prices are nominally unchanged.

PREMATURE.—The report circulated last week that the Sable Iron and Nail Mill had been sold by the trustees for \$150,000, was premature. It is true such an offer was made, but it was re jected. It will probably be offered at public realize a considerably better price than the one to which reference has been made.

PETROLEUM.-This important interest continues fairly active. Nearly all our refineries are in operation, and the general position of the market is more favorable for refluers than it has been this year, in one respect, and an important one. While the raw atticle is barely bolding its own, the product is firm and higher Pittsburgh has turned out more oil from January 1 up to this time than ever before in the same time. The shipments to Richmond vis river to Huntington have been about 40,000 barrels.

COKE.-A combination has been formed by Western manufacturers similar to that of iron and glass, the object being to keep prices up sufficiently to afford a living profit, and to regulate, if possible, production. Business continues dull.

#### BOSTON.

JUNE 24.-Pig continues along in a stupid way, holders taking pretty nearly what buyers offer, but selling very little. There is in fact a alight view of improvement in the tone of the market, more especially noticeable in holders being unwilling to sell more than five or eight ton lots at the prices, while here and there a small advance is asked. Bar has a quiet jobbing trade at from \$51 to \$55, according to order and character of buyer. The improved tone last noted is upheld, while the advices from last noted is upheld, while the advices from the West are more uniformly favorable for a steadier market. Steel remains quiet and firm.

We quote: American Tool, 14c. to 15c.; American Machinery, 8½c. to 9½c.; Bessemer

White and Mottled.

Tires, 5%c.; Sweet's Excelsior Tire, 7%c.; English Tool, 15%c., gold. Copper at 20c., our inside of a week ago, is easy, and sales have been made at less prices although no lower quotations are announced. There is a little more inquiry but no indications of confidence among buyers that they consider the bottom reached. There seems to be some question as to the uniformity of manufacturing companies' combinations, some of the larger pump makers and shipbuilders being disposed to question the outside range we note this week which is on the combination list. For manufactured we quote: New Sheathing, 30c. to 31c; Bolts and Braziers, 31c. to 32c.; Yellow Metal Bolts, 20c. to 21c. Lead holds steadily with a very meager business. We quote: Pip, 6%c. for Domestic, and 7%c., gold, Foreign; Sheet, 10c.; Pipe, 9%c., currency; Tin Lined Pipe, 16%c.; Bar Lead, 9%c., less usual trade or 10 per cent. discount. Antimeny continues in small request and steady at 16c., gold. Spelter is easy at 7%c. Tin is casier, and, while one or two large sales have been made under our quotations, holders refuse to quote any lower as yet. Plates are quiet and nominally steady. We quote: Straite, 18c.; Banca, 22%c.; Refined English, 38c., gold. We quote Plates: Charcoal I. C., \$7.50; Coke, \$6.25 to \$7; and Terne at \$7.50 to \$8, gold.—Commercial Bulletin.

CINCINNATI.

Messrs. L. R. Hull & Co., under date of June 24, write us as follows: Pig Iron.—
We think, on the whole, the movement during the past week has been somewhat better, and the inquiry appears well sustained. It is reported that a small amount of a choice brand of Hanging Rock has been sold at \$23.50, here, butwee unierstand no more can be had at same price. This is an exception, and the sacrifice made was unnecessary, even if the aim was a quick sale. Best No. 1 Foundry is firm at \$24.50, here, with more likelihood of an advance than a decline.

Dast week reach about the Irons now coming forward are very superior. The stock of indifferent Iron has nearly all disappeared. The market is a shade weaker, although quotations here are not changed.

Virginia cold blast Charcoal Pig Irons (according to brand).

Va. hot blast Che Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 1 ex. 24.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 2 ex. 29.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 2 ex. 29.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 2 ex. 29.00 @ 28.00 Vs. hot blast Coke Pig Iron, No. 2 ex. 29.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 2 ex. 29.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 2 ex. 29.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 2 ex. 29.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 3 ex. 19.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 3 ex. 19.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 3 ex. 29.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 3 ex. 29.00 @ 29.00 Vs. hot blast Coke Pig Iron, No. 3 ex. 29.00 @ 29.00 Vs.

STONE COAL AND COKE. COLD BLAST. Hanging Rock Car Wheel 2 in, \$40.00 @ 45.00—4 mos. Missouri \$35.00 @ 40.00—4 mos. Southern Br'ds \$500 @ 30.00 @ 40.00—4 mos. Machinery and Forge. \$0.00 @ 35.00—4 mos.

#### ST. LOUIS.

Messrs. Spooner & Collins, Irou commission agents, 409 North Third street, St. Louis, under date of June 22, report the Iron market as follows: We note no change in our market since last report. Our foundries are preparing to shut down for the warm morths, and that of itself will lighten trade considerably.

d	itself will lighten trade considerably.
1	Mo. Stone Coal, No. 1 F'dry \$25.00 @ 26.00-4 mos.
1	" No. 2 F'dry, 23:00 @ 24:00-4 mos.
ł	" No. 2 F'dry. 23 00 @ 24 00 4 mos. Gray Mill 22 00 @ 23 00 4 mos.
ļ	" Charcoal, No. 1 F'dry 23 0 @ 24 00-4 mos.
	" No. 2 F'dry 22'00 @ 23'00-4 mos.
1	" Gray Mill 22:00 @ 23:00-4 mos.
١	Tenn. Charcoal No. 1 F'dry., 23.00 @ 24.00-4 mos.
1	" No. 2 F'dry 22'00 @ 28'00-4 mos.
1	No. 2 F'dry 22 00 @ 23 00 4 mos.
ı	Tenn. & H. R. Coke Iron No. 1
1	F'dry 25 00 @ 26 00 -4 mos.
ł	F'dry
1	F'dry
ı	Tenn, & H. R. Coke fron Gray
ı	Mill
ı	H. R. Charcoal No. 1 F'dry 25:00 @ 26:00-4 mos.
١	H. R. " No. 2 F'dry., 24'00 @ 25'00-4 mos.
ı	H. R. 44 No. 2 F'dry 24'00 @ 25'00—4 mos. H. R. 44 Gray Mill 24'00 @ 25'00—4 mos.
ı	Massillon Iron. No. 1 29'00 @ 81'00-4 mos.
ı	S. Ohio Am. Scotch 24'00 @ 26'00-1 mos.
1	Mo. Charcoal Blooms 50.00 @ 60.00-4 mas.
ì	" Scrap " 45'00 @ 50'00-4 mos.
ł	" Scrap " 45.00 @ 50.00—4 mos. Mo. Charcoal Hammered
١	Billets 75 00 @ 80 00-4 mos.
١	Assorted Bar Iron 2% rates.
ı	No. 1 Wrought Scrap '90 @
ı	Heavy Cast " 65 @
١	No. 1 Wrought Scrap '90 @
١	

#### CHATTANOOGA.

Mr. S. B. Lowr, under date of June 24, reports as follows: But little change can be noted either in price or in movements of Irou at this point. Small orders are country in quite freely from the South, while from the West one bundred to five hundred ton lots have been sold within the past week. COKE. 

	No. 1 and \$ Forge 16:00 @ 18:00 White and Mottled. 15:00 @ —  HOT BLART CHARCOAL  No. 1 Foundry, extra. \$21:00 @ 25:00 No. 1 Foundry. 19:51 @ 21:00 No. 2 Foundry. 17:00 @ 19:00	tive on small orders, and prices are unchanged. In the Meurthe and Moseile affinage Pig Iron is pro-	
t	No. 1 and 2 Forge	tainly not a brillant one, but there is an impression prevalent that henceforward any change can only be	ľ
	Car Wheel Metal. \$23:00 @ 28:00 Force Metal. 18:00 @ 29:00 No. 1 Wrought Scrap. per lb. 3c. @ No. 2 Wrought Scrap. \$50.00 metal. \$18:00 @ 21:00 @ 21:00 @ 21:00 @ 21:00 @ 21:00 @ 21:00 @ 21:00 @ 21:00 @ 21:00 @ 21:00 @ 21:50 @ 21:50 @ 21:50	for the better. In Iron matters our country has got along better than any of its neighbors, and a similar prospect seems to await us for the future. Coal.—Prices are still very low; extraction has now been curtailed to the utmost, and the bulk of what we consume for the moment is imported Coal. Our companies have taken this course for the mouth or two, an; will only recommence accumulating stock in September and October, in order to be able to meet the more active fall compand.	
			l

#### BALTIMORE.

Messrs. Wyerh & Brother, Iron and Steel merchants, South Charles and Lombard streets, report us the following prices under date of June 27: The amount of business transacted the past week was rather beyond the average, and the general feeling somewhat more hope-ful. We quote the market as firmer with un-altered values.

altered values.

American nepimed har iron.

1 to 6 wide by ½ to 1 thick.

1 to 4½ wide by 1½ to 2 thick 1

1 to 4½ wide by 1½ to 2 thick 2

1 to 4½ wide by 1½ to 2 thick 2

Round and square, ordinary sizes, from ½ to 2 thick.

Hoop Iron, 1½ wide and upward.

8½ to 2 thick.

Band Iron, from 1½ to 4 in. wide.

8½ to 24-10c.

Horse Shoe Iron ½ to 4 wide by ½ to 5

thick.

8½ to 4c.

Norway Nall Rods.

Norway Nall Rods.

Norway Nall Rods.

15 to 15½c.

Black Diamond Cast Steel, Flats, Squares

and Octagon, ordinary sizes.

15 to 15½c.

Machinery Steel.

9 to 9½c.

Homogeneous Steel Plate.

9½ to 10c.

Perkins' Horse Shoes, per keg of 100 lbs.

Perkins' Horse Shoes, per keg of 100 lbs.

10 9 8 7 6

Rule Shoes

Norway Nalls, 23 24 25 26 28c. per 8.

Globe Horse Nails. 23 24 25 26 28c.

Mesers, R. C. Hoffman & Co., Iron and commission merchants, Nos. 23 and 25 South frederick street, report the Pig Iron market as follows, under date of June 27: We have no change to note in the Iron market aince our last report. We quote:

Baiti.nore Charcoal.

830 06 25 500 Virginia AMERICAN REPINED BAR IBON

28-00 @ 34-00 28-00 @ 24-00 21-00 @ 22-00 30-00 @ 21-00 17-00 @ 19-00

#### CLEVELAND.

Messrs. C. E. BINGHAM & Co., 25 West Mein street, under date of June 25, quote the Iron market as follows, 4 mos. time: POUNDRY IRON.

No. I Lake Superior Charcon, 34: 00-4 m.
No. 9 " 16-50-4 m.
No. 1 Anthracite 25:50-4 m.
No. 2 4
No. 1 Bituminous 25.00-4 m.
No. 2 " 23.00-4 m.
No. 1, Cherry Valley Am. Scotch 27 00-4 m.
B—1 " … 26·0∂—1 m.
No. 2. " 24'00-4 m.
No. 1 Massillon 96:50-4 m.
B-1 25·00-4 m.
No. 2 21'00-4 m.
CAR WHEEL AND MALLBABLE IBOY.
No. 3 Lake Superior Charcoal\$27.57-4 m.
No. 4 " 27:50—4 m.
Nos. 5 & 6 " " 27-50-4 m.
BERSEMER USON.
Nos. 1 and 2 Lake Superior Charcoal\$27.00-4 n.
PORGE INCH.

#### RICHMOND.

Mr. Asa Snyder, Iron Merchant and Furnace Agent, Richmond, Va., writes as follows under date of June 26: There exists the same quiet Iron market as at last report. Sales for the past week reach about 200 tons. The receipts continue very light. The Irons now coming forward are very superior. The stock of indifferent Iron has nearly all disappeared. The market is a shade weaker, although quotations here are not changed.

#### FOREIGN.

FRANCE.

(Monifeur des Interets Meieriels).

PAHIS, June 11, 1876.—Médals.—Business has been laterrupted by the Whitsantide holidays, and, moreover, by the uncertainties which attend the development of Eastern affairs. Money remains as easy as ever, which is due to the extreme caution exercised by capitalists generally, and the commercial classes in particular. Add to this the extreme refluctance on the part of consumers to replenish supplies, the total absence of speculation, and the approach of the dual season, and we have an explanation for the drooping attitude of the metal markets of Europe. Copper.—The amouncement by cable of light charters at Valparaiso has falled to produce a favorable effect on the Copper market, parily in consequence of the auction sale of the Wallaroo Company, which is to come off at the end of the mouth at London. Statistically, Copper neems afte enough, but, compared with other qualities, chill Bars are decidedly too high, hence their gradual decline, which begins to carry down the whole market. We have been weaker here at the following quotations: Chill Bars, deliverable at Havre, 418-35 france; Common ditto, 307-59; Ingots, 215; English Tough Cake, 212-50; and pure Corocoro Ore, 212-75. Havre has become very quiet at 207-30 to 210 for first brands Chill Bars; 305 to 207-50 for good current, and 328-75 to 305 for Lota and Urmeneia. Morseelles is keeping up current rates with some difficulty; Red Tokat at 200 france; Small Ingots, 210; Bolis, 245; Sheathing, 210; Yellow Metal ditto, 215 to 230 fr nee, loss 3 per cent, for c. 8h. Tra.—A great effort is being made by the supporters of Tin to come to the resence of dro. oping values. Accounts from Australia by mail predicts a falling off in production of between 46 and 30 per cent. This decrease is to result from a partial abandoment of the mines. We have been but too frequently treated to stories of this kind, and it would be wrong to place too much fath in them. As long as the statistical position remains a had one, we do not antici FRANCE.

#### BELGIUM.

BELGIUE.

(Revue Unserveille).

(Revue Unserveille).

BRUSSELS, June 11, 1876.—Iron.—Prices have remained stationary. The steadiness now observable in Iron values has caused a good many consumers of special machinery to give orders to our larger works, in filling which they are now engaged. It is to be presumed that this resolution to order now what had been so much delayed will become more geteral in Belgium. Other countries in the habit of getting their hachinery from Belgium will, in all likelihood, follow the same example, upon the theory that Iron and steel have touched bottom. A revival is thus brought about by the actual demand for bong fide consumption. Gradually this tendency will spread all over the North of Europe, and the capacity of absorption will thus be restored upon a sound basis. It will take three long years to bring about this desideratum; we have all passed through a severe ordeal, but the establishments left standing are now in an excellent position to avail themselves of any change for the better. The raw material and fuel are ruinously cheap. Their working capacity has been greatly improved by new machinery and tools, and we are now fully able to cope with foreign competition, both at home and abroad. God.—On the 6th instant there was an opening of tenders for a large amount, which the government stood in need of. The prices obtained were very low. Simultaneously our gas works had laid in a large supply. The subject which now occupies the attention of the producers of Coal and Iron in Belgium, particularly, is the expiration of the treaty of commerce between Belgium and France, which will take place during the sammer of next year. A good many views are being exchanged between the partice interested in both countries, and it is to be hoped that a liberal and equitable arrangement will be arrived at, satisfying both countries.

#### GERMANY.

treme quietness, as has to be expected during this season of the year. Meanwhile the financial state of affairs remains devold of excitement. Eastern politics have also ceased to spread uneashers, and overything seems to point to a pe lod of great duliness. Both consumers and dealers have, to some extent at least, replenished supplies, and importers, not being in a speculative mood, are quitting the seaports and large inland clites in order to take rest at the watering places. Copper,—Not much activity being perceptible in the consumptive domaind for the time being. Our markets have been quiet, and we quote as follows: English and Australian at Berlin, 87 to 83; Stettin. 93'30; Dronthelm, 90; Minnesota, 109; Quincy, 97; and Best Selected, 87 marks. Tin.—The continual fluctuations which have been taking place between Holland and England since the Dutch sale bave disconcerted our markets a good deal. There seems to be less Tin coming from Australia and the Straits, but the heavy stock at London apparently sets at naught any prospect for permanent improvement. We have been quiet here at 91 for Banca, at 85 for Common English and 87 for ditto Refined. Berlin quotes as follows: Banca, 89'30 to 90; English Refined, 78'30 to 71. Lead.—Those who were in need have now slocked up well for the summer season. The consequence is a gradual slackening and weakening in the German narkets. Very little is bought for government account. Berlin quotes Hartz, Tanowits and Saxonian, 32 to 33 marks. Stettin unchanged at 37 for Spanish, and 22 to 94 for German We have been very quiet here, and quote, nominally: German, 32'50 to 33; English Pig, 34 to 4'50; English Sheet, '4'50 to 25. Speller.—A moderate demand continues eince the large sales which took place at Bresiau three weeks ago. Berlin is steady at 34 to 25 marks, and the current quotation is still 34'30. The foregoing quotations are all for 59 kilos, in marks.

#### HOLLAND.

HOLLAND.

(Koch & Vierboom).

ROITERDAM, June 13, 1876.—77n.—Since the auction sale the market has quieted down again, and lianca has receded—first to 45%, and subsequently to 45% gailders, while Billiton has been sold at 43%. There are few sellers at these prices; but, on the other hand, purchasers having supplied themselves pretty largely at the late sale, show little anxiety to extend their operations. This quiet is, moreover, in consonance with the general aspect of the markets, London showing renewed signs of wavering.

#### AUSTRALIA.

AUSTRALIA.

Adelaide Advertuer.

ADELAIDS, April 31, 1876.—Copper,—The Moonta mine.—We have received a copy of the accounts of this flourishing mine for the half-year ending May 30. The output of ore has been well sustained, the total quantity raised being 17, 162 tons of 20 per cent. fine Copper. As there were 3390 tons on hand, the directors found that they had 13, 265 tons to dispose of during the six months just closed. Of this they sold to the Wallaroo Company, under the terms of agreement entered into some time ago, 10, 365 tons, which realized the handsome sum of £123, 12. Capt. Hancock gives detailed particulars of the working of the 36 shafts, from which we gather that the yield varies from 1 ton to 8 tons per failom, with a richness varying from 15 to 35 per cent. The stuff from some of the trial shafts is reported to present favorable indications, and the extensive plant and surface arrangements are all in efficient order. Altogether, the position and prosperity of the mine continue to be most favorable and encouraging. The Burra Burra Mine.—The 31st annual report of this still f.mous mine shows that during the six months ending March 31, the production of ore reached 551 tons of 37 per cent. fine Copper. This excellent result, the directors state, has been obtained by continued improvement in the machinery for dressing, which is now so efficient and economical that extremely poor ore stuff can be profitably treated, and bought up to a very high produce. There has been no less than 43,900 to.s of haulange during the last six months, and 35,530 tons of ore have passed through the machinery. Capt. Saunders, atter giving account of the detailed workings, states that so far as the deep workings have been developed the proceeds excel his expectations, and the good opinion he formerly held has been sustained.

#### NEW CALEDONIA.

NEW CALEBONIA.

(Melbourne Arque.)

Melbourne Arque.)

Melbourne Arque.

Melbourne Arque.

Melbourne Arque.

Melbourne Arque.

Mickel mines now being worked are on the east coast of the island. The Ballard Mine, at Amilaw, and M. Hanker's mine, at Kanala, are the most important, their culput of ore being of the value of about £1000 per nouth. Most of it is sent to France. Contracts have been cutered into under which all the ore that can be produced will be taken by Continental European countries, and the demand is much greater than can be met until more mines are opened up. Most of the capital invested in the mines now at work is Melbourne capital. The bank of Noumea advances freely upon ore at the rate of from £30 to £25 per ton, on ore yielding 10 per cent. of metal. The metal is worth 14/ per ton, at which price the American government purchases Nickel to be used as an alloy in its sliver currency. Certain Continental nations use it in the manufacture of smaller colts. The demand for the metal is understood to be practically unlimited. If only there were reasonable assurance of a considerable and steady supply, it would be introduced into several of the manufacturing arts, in which it has not yet found a place. Melbourne silversmiths would use it extensively if they could get it. Arrangements are now being made with a view to the further introduction of Australian and British capital into this new field of enterprise. Noumea is 1650 miles distant from Sydney, and is reached by steamship in about four days. The mining regulations of New Caledonia seem to have been framed on Victorian models with some improvements.

#### EAST INDIES.

Colombo, May 9, 1876.—Plumbago.—Only a moderate business doing for London, and a few orders are being completed for the States. The sizes most in request are Chips and Dust at about £7, 10/ and £4, 15/, first cost, respectively; ordinary size Lumps are chapper at about £14 per ton. Receipts from the interior continue limited. P. S.—May 13, 1876.—Some small orders have receasily been received from the States and from London. Demand continues moderate. Market quiet at our quotations. We quote at the close, free on board, per ton. Lump, 310/; Chip, 180/; Dust, 125/. Siipping.—The Weidenhjelin snow loading, and by her almost all existing orders will be completed. Cargo very scarce. Exchange.—Market closes weak at 1/9% for credit, and 1/9% for documents. Bank selling rate, 1/6%; private credit rate nominal. (Gilfillan, Wood & Co.)

Singapone, May 6, 1876 — Tin—Shorily after our last report prices touched \$00 50 per picul, with a mash transaction at \$20.27% per picul, but almost immediately buying for America set in, and though not extensive, it sufficed to raise the price to \$21, and then to \$21.20 per picul. Supplies continue anguality small, and theigh more favorable weather for washing the ore promises to give us larger quantities, we shall continue under the average until prices materially change. Freights remain depressed. The Perman is loading for New York at a freight for tin to be determined on the basis of coffee. Exchange on London is \$/11% per \$4,6 months against credits. Exports from the Straits to the United States for the first four months: 12,850 piculs in 1876 against 23,594, 14,112, 12,768, 21,788, 15,590 and 14,615 in 1875, to 1870.

### Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.)

SHEFFIELD, ENG., June 12, 1876. THE EASTERN QUESTION

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DB 114

has been so prominently before us of late that. I cannot do less than make a passing reference to its present aspects and the probability that HAMBURGH, June 10, 1876.—Metale.—Not much change can be reported. There have been some interruptions in active treds in consequence of the holiciays, and the general tone remains one of ex. now exists of a peaceful solution of the Turkish

across to your daily papers, has had a tendency to make matters appear better than they had for some time previously looked, and we are now in the hope that the Sick Man's latest convulsion may pass away without being the cause of a general blaze of war. Nobody here for a moment endeavors to extenuate the existence of European Turkey per se, but merely as a stop gap, as an admirable check to the movements eastward of the "Wily Mu-covite"-as the newspaper writers of a certain stamp term the Russians. As I have stated in a former letter, we are content to let the government pursue its own course, being fully convinced that its policy at this critical juncture has been dignified without being unduly inflated, calm without being passive, and powerfully impressive without making any fuss. We are still preparing for any eventuality that may lead us into a war. The Rupert ram has been launched and is being made fit for sea. The Himalaya is to be instantly refitted and made ready for sea at Devonport dockyard by July 6. All naval pensioners under 55 years of age have received notice to hold themselves in readiness for active service, and permission, with special advantages, has been given to all pensioners under 45 to join the naval reserve. Preparations have also been made for dispatching to Malta medical stores for 5000 men over and above the full strength of the squadron now cruising in the Mediterranean. Other preparations are in quiet force, all tending to show that there is still every probability of war arising before long.

THE COMMERCIAL DISTRESS

continues to be more palpable every succeeding week, and in many quarters fears are expressed that we have a very serious immediate future before us. On all sides achemes of reform, retrenchment and additional efforts are visible, being rendared absolutely necessary by the exceedingly hard times which have overtaken us. Already there is a good deal of quiet privation in the humbler ranks of our towns' populations, and as the winter approaches I am afraid much suffering will come about. It is not one trade, or a few industries that are badly employed, but a paralysis which has levelled all the industrial energies of the nation—I might say of the whole world. The India Mail Gazette, in an excellent article, written I opine by Mr. W. R. Greg, says: "The three years of distress have cured effectually the undue conversion of floating into fixed capital. They have purged away most of the abuses and excesses of credit; but they have not yet brought down the cost of production to a point which tempts capital by reason of cheapness to rely upon the prompt and effectual response of consumption. Still, rapid progress is being made in that direction. The losses of manufacturers, merchants, dealers and tradespeople have become so general, and the lessened dividends upon all capital invested in jointstock companies have so seriously impaired large classes of incomes, that the process of correction is now at work with accelerated force. During the present year all attempts of trade unions to restst reduction of wages have been more or less defeated, and the decrease of employment has enabled the masters to get rid of the less efficient hands, and thus "amend somewhat the circumstances of production. Emigration to the United States and Causan is almost copped, and steamers from New York bring to Liverpool weekly hundreds of artisans in search of work in the old country." continues to be more palpable every succeed ing week, and in many quarters fears are ex-QUICK RAILWAY WAGON BUILDING.

QUICK RAILWAY WAGON BUILDING.

The Engineer says: "At a recent meeting of the Civil and Mechanical Engineers' Society Mr. R. M. Bancroft, of the engineer staff, Great Northern Railway, and senior vice-president of the society, gave the following particulars of a covered goods van, which was made complete by the Ashbury Rolling Stock Construction Company, in one working day: All the ironwork, boits, axle boxes, wheels and axles were manufactured from pig iron, and the wood work cut out of the log and deals; 4 tons 5 cwt. of pig iron, 4 logs of tenk wood and 26 deals were the materials from which the work was done. The work commenced at 7-15 a. m. and was finished at 6-35 p. m.—11 hours 20 minutes—and the van quite complete, was then loaded with ordinary merchandise and forwarded to London by 7 o'clock ordinary goods train. It was unloaded next morning at King's Cross station, and then conveyed to the Exhibition building in South Rensington, where it arrived by 10 o'clock in the forenoon, or within 37 hours of the time when the work was first begun."

This, to put it very mildly, was a truly wonderful feat, but the standing of its narrator is
a full warranty of its accuracy. The construction of the van body I can quite "see," so to
speak, but I confess that I am rather sceplical
as to the wheels. They must have been under
the van in good time, and then the run in rough
new journals to London—300 miles—at high
speed—but no matter, I cave in!

COLLEGES WAGES.

COLLIERS' WAGES.

The depreciation of wages in all trades is a matter of much and earnest discussion just now in certain quarters. The men are beginning to see that combination cannot contend against certain circumstances, and that after all the laws of supply and demand "rule the roost." The newspapers are filled with correspondence on both sides the question, but most people are content to "let things slide," in the full assurance that we are gradually descending the scale toward a period of moderate prices. The colliers are, perhaps, most disconcerted at the turn affairs have taken, and some of them appear nugely discontented now that they are unable to feed their graybounds with beefsteaks and mutton-chops. I do not mean to say that all the miners are of that class, but the genus is a large order, and very despicable in some of its characteristics. Some of the miners are earnest, clever, calculating men, and these soon make their marks. One of them, in writing to the Sheffield Daily Telegraph the other day, quoted the following sapient axiom, which is, I think, lumberely amusting:

Microscoy amount:
No quantity of pounds shall make 1 stone;
Twice that amount shall make no quarter;
No amount: -f quarters shall be called 1 cwt;
But 18 cwts, shall be rockoped 1 ton.

This, he says, used to be the rule of the masters, and I regret to say there is but too much truth in the assertion. In some districts the coal owners were guilty of the most outrageous oppression and the poor miners were held merely as so many cattle.

A GREAT TRADES UNION The twenty fifth annual report of the Amalgamated Society of Engineers, which has branches in all parts of Great Britain, the colonies and in America, has just been useued and is, in a condensed form, worthy a perusal: At the close of 1874, there were on the books 48,150 members, and at the end of 1875, 44,082, a difference of 882 in favor of the society. After allowing for all deaths and exclusions, the increase in the number of members during 1874 was 768, or 114 less than last year. The income during the year from all sources amounted to £130,024.

2/34, against £118,556. 4/14 in the preceding May 80th, 1876...

year, an increase of £1,467. 18/13. Expenditure, however, had also increased to the extent of £13,382. 1/13, as £80,489. 14/103, in 1874 had swelled out to £94,371. 16/in 1875. The chief cause of this increased outlay was a material difference in the state of trade throughout the society in 1875 as compared with 1874, and thus it would be found that against £19,344. 7/11 expended on donation or out-of-work benefit in 1874, no less than £28,500. 6/was expended in 1875, a difference against the funds of £9155. 18/1. Frequent petty trade disputes had caused an increased outlay in contingent benefit to the extent of £1209. 1/3. Despite, however, of au increased expenditure, consequent upon a bad industrial and unsanitary year, the bilance in favor of the society had been advanced from £338,989. 10/934, at which it stood at the close of 1874, to £264,641. 12/1, an increase of £25,652. 6/334.

THE BOARD OF TRADE RETURNS

made up to the end of May, have just been is-sued, and show a general decrease, except in the quantity of iron and steel sent off during the quantity of iron and steel sent off during the month, as compared with the same period of 1875. I suspect that the increase has almost wholly been from South Wales and Monmouthshire. The increase has been in cast or wrought pig, and, in a slight degree, in railroad iron. There was a much larger exportation of coal, coke and patent fuel—the extra quantity over the same month of last year being 305,077 tons—chiefly for Russia, Germany, France, Italy and India. Some of the figures are as follows:

Hardware and Cutlery. Hardware and Cullery.

	Month	ended 31s	
		Valu 1875.	es. 1876.
		£	£
To Russia			13,572
Germany		. 21,491	19,517
Holland		9,196	9,986
Franco	*******	. 10,138	11,414
France . Spain and Canaries.		7,282	11,671
Third States		85,738	24,439
United States Spanish West India	Talanda	. 8,816	4,926
Spanish west thurs			
			21,664
Argentine Republic.		. 13,489	7,281
British North Amer	тев	. 38,419	18,749
British India		. 24,417	25,827
Australia		. 01,462	50,653
other countries		. 94,190	84,614
Total		855,334	303,413
Iron	and Steel.		
		ided 31st	
	1875		1876.
Quantity	y. Value.	Quantity	. Value
Tone		Tons.	£
Pig fron 86,79		97,867	311,236
Bar angle, bolt and			
rod 24.42	7 248,113	17,935	157,583
rod. 24,42 Ryilroad 49,29	8 507,766		453,452
Wire 3,25	7 64,673	3,418	58,978
		0, 110	00,010
Boiler, armor plates, &c 16.30	6 279,716	14,946	222,427
Tin plates 10.90	2 290 578	12,112	273,428
Tin plates 10,29 Cast or Wrought. 22,77	2 290,573 5 398,716	29,430	419,500
Old for remanu-	0 000, 110	40,430	*10,000
	0 7,201	8,427	13,307
		2,605	
	209,090	4,000	94,647
Manufactures of	n 94 mas	4.017	#0 0m0
steel and iron 1,00	84,724	1,017	78,373
M-4-1 919 909	0 905 199	999 OK6	9 000 001
Total218,868			
Of railroad iron the	particula	rs are th	ese:
	May.	May,	5 mos.
	1875.	1876.	1876.
Railroad, of all Sorts.		Tons.	Tons.
To Presia	9.256	6,059	8,913
To Russia Sweden and Norwa	v. 6.705	7,322	22,386
Denmark	890	1.256	
		289	1,339 1,502
Germany		105	
Holland	24	100	170
Belgium	24	**	140
France	1 095	1.015	30
Spain and Canaries.		1,815	5,850
Italy		3,617	14,461
Turkey Egypt	12	1	71
Egypt	190		136
United States	1,283	2	96
Brazil	776	1,046	1,709
Peru	312	54	1,709
Chili	2.622	891	1,565
Peru Chili British N. America	18.323	8.693	20,593
" India	1.207	7,061	20,509
Australia	6.874	2,693	12,611
Other countries	3 397	9,400	27,125
Other Countries	0/001	2,100	21,740
Total	49.298	50,299	144,723
	S		244,140
SCOTO	FIG TROY	2	

SCOTCH PIG IRON.

There has been no alteration in this respect during the week, except a fairly good increase in the quantity of pig shipped. Prices are very quiet, with a steady business doing.
Writing from Glasgow, June 10th, Messrs. James Watson & Co., said: "The tone of the warrant market has been quieter this week, the price being steady from 57/9 to 57/6, closing sellers at 57/7½, cash. Shipments last week were 11,019 tons, against \$708 tons in the corresponding week of 1875." We quote:

teshonging	Mccw o	1 1010.	me quote;	
1000 3 3 5			No. 1.	No. 3.
G. M. B., at	Glasgo	w	58/	26/
Garteherrie.	68			58/
Coltness,	0.6		69/	58/
Summerlee.	86	*****		57/6
Langloan,		******		58/
Carnbroe.	96	*****		57/6
Calder, at Po	et Dund	las	66/	57.6
Hengarnock				58/
Eginton.	64		57/6	56/6
Dalmellingto	III. 68		57/6	56/6
Shotts, at Le			68/	60/
Kinneil at I			59/6	56/6

SHIPBUILDING FOR THE COLONIES. On Friday evening a number of gentlemen connected with our antipodean colonies dined together at Glaspow, under the presidency of Sir James Fergusson, late Governor of New Sir James Fergusson, late Governor of New Zealand. In the course of a discussion on shipbullding it was stated that there are now not fewer than 16 steamers in course of construction on the Clyde for our colonies. Mr. Denny, a shipbullder, of Dumbarton, in the course of the discussion which followed, said the present enormous depression of the shipbullding trade arose from the fact that during the last ten years great advances had been ing the last ten years great advances had been made in the mode of construction. A ship of given goes tonnage and speed now carried exactly double the cargo it used to. He thought the demand for the colonies would, however, furnish such a demand as would enable to tide over the bad times well. Two thirds of the tonnage now building in his own yard was for New Zealand, and he believed that other favors were likely to be forthcoming.

THE CLEVELAND IRON TRADE The following are the returns of tht Cleve-land Iron-masters' Association, fasued June 10th. They are worthy of perusal, as the dis-trict is highly and increasingly productive and important.

Make of Pig Iron.

" " 3	list May, 1876 list May, 1875	
	Oth April, 1876	169,664
Increase up Decrease up	on April, 1876 pon May, 1875	
Shipments Fo	reign of Pig Iron Middlesborough	
Month ending a Corresponding	tist May, 1876 month last year	
Increase up	on May, 1875	14,408
Shipments (	bastwise of Pin In	
Month ending 1 Corresponding	nonth last year	80,440 21,750
Іпстеаве пр	on May, 1875 Makers' Stocks	
	on April, 1876	2,239

TRADES OF SHEFFIELD.

Preliminarily, I may remark that Mr. Joseph Slagg, one of the managing directors of William Jessop & Company (Limited), has been elected chairman of the company, in place of the late Mr. Balstone, who committed suicide, owing, as was stated, to heavy stock exchange losses. I believe Mr. Slagg is pretty well known on your side of the Atlantic, he having been convected with the concern for many soors. There your side of the Atlantic, he having been connected with the concern for many years. There has been nothing doing in business during the past week, but owing to the practical settlement of the South Yorkshire miners' strike on Friday last, 'here is a feeling of rather more confidence in the future of the iron trade, it being supposed that with cheaper fuel prices may be a reduced as to attract customers who may be so reduced as to attract customers are now debarred from buying iron by the high prices currently quoted. Pig iron is easier on the week from the same reason, and is further slightly depreciated in value by the fact that stocks are increasing in the North of England, Sectiond, and other iron making distrate. stocks are increasing in the North of England, Scotland and other iron making districts. Foundry numbers are perhaps in best request, but they are by no means called for in quantities equal to the production, even on its present linited scale. Several of the district blast furnaces are out of blast. One or two are being blown up with dynamite, for the purpose of removing the slag, and one or two others, the two at the Thorncliffe Works included, will be blown in again now that the miners' dispute has been disposed of.

The cutlery trades are admittedly growing worse than they have yet been. I hear that one of the largest houses will not resume running its engines, after setting down for Whitsuntite, until June 20th. This is about the foremost firm in the American trade. They have never before been so badly engaged. Rodgers & Sons are nearly in as unpromising a plight.

Dight.

CHARLES CAMMELL & CO., LIMITED.

One of the chief subjects of conversation in business circles here this week has been the remarkably good report issued on Saturday last by the directors of Charles Cammell & Co., limited, to the shareholders. I may say that the nominal capital of the company is £1,000,000, of which £500,000 have been paid up. The company's properties are the Cyclops Steel and Iron Works, including the Howsrd and Agenovia Works, sheffield, which have an area of 10 acres 3 roods; the Grimesthorpe Steel Works, Sheffield, which bave an area of 10 acres 3 roods; the Grimesthorpe Steel Works, Sheffield, which bave an area of 10 acres 3 roods; the Grimesthorpe Steel Works, Sheffield, which bave an area of 10 acres 3 roods; the Grimesthorpe Steel Works, Sheffield, which bave an area of 10 acres 3 roods; the Yorkshire Steel and Iron Works, Fenistone, area 25 acres; and the Oaks collieries, Barneley, with a coal field of an area of 1200 acres of the 9 ft. or Barnsley seam. The dividend recommended by the directors is this year 10 per cent, as against 7½ per cent, last year, the year's profits having been £106,869, as compared with £68,039 in the preceding year. The directors state that not-withstanding the great depression which has existed throughout the steel and iron trades during the year over which the accounts now presented extend, they are glad to state that, with one or two minor exceptions, the several departments have been comparatively well employed, and each has contributed toward the profit realized. The company has been fortunate in having executed during the year several important contracts for from and steel which had been made some time previous. £20,006 is recommended to be added to the reserve fund. "Reductions in wages," the report continues, "have been made in the valicus manufacturing CHARLES CAMMELL & CO., LIMITED. recommended to be added to the reserve fund. "Reductions in wages," the report continues, "have been made in the various manufacturing departments of the company's business, the present depressed condition of trade having been readily admitted by the workmen, with the exception of those employed in the colleries." It is generally admitted that such a report as this is of an encouraging nature to the trade as a whole, although it is well enough known that Cammell & Co. have special departments—armor plate manufacture to witpartments—armor plate manufacture to wit—which are the source of exceptional activity and profit. The report of John Brown & Co., imited, the other leading local coucern, will be issued, I believe, in about a week.

imited, the other feading local concern, will be issued, I believe, in about a week.

NATIONAL CONFERENCE OF IRON WORKERS.

The annual conference of the National Association of Iron Workers was commenced at Sheffield on Tuesday afternoon, Mr. Ancutt, president of the Association, being in the chair. There were 50 delegates present from various parts of the country, their constituents being said to number from 25,000 to 30,000. A vote of condolence was unanimously passed with the widow of the late Mr. John Kane, formerly the secretary of the Association, and it was resolved to subscribe £500 for the purpose of purchasing an annuity for Mrs. Kane, the £500 given by the North of England iron-masters being devoted to the same end. On Wednesday the conference re-elected Mr. Aucutt as president of the Association, and elected Mr. Edward Trow general secretary. It was resolved to hold the conferences every two years instead of every year, as at present, and to issue the Jronworker's Journal monthly instead of fortnightly. The chief feature of the day's proceedings was the adoption of a resolution to centralize the whole of the funds of the Association in the names of the general trustees. On the last day's sitting Mrs. Kane addressed the delegates in a most able manner, telling them the only enemy they had to fear was drink! This, I think, was courageous, to say the least.

BIRMINGHAM AND DISTRICTS.

Here, as in other districts, Whitsuntide has seen a long holiday, and on a resumption it is been a long holiday, and on a resumption it is being found that matters are even worse than ther were a fortnight ago. In the iron trade there is in reality very little business being done, but there are, of course, a few forced sales, both by concessions in prices and by the necessity for purchasing for specific purposes. Prices are nominally wholly unchanged, but there is no doubt whatever, from what I hear, that makers are making offers in many quarters at several shillings under their quoted prices. at several shillings under their quoted prices. The shipping trade for hardware is very rapidly declining. Edge tools, brass foundry and rail-way rolling stock are, perhaps, selling better than anything else.

than anything else.

SOUTH WALES.
Last week the iron exports were principally to Sundswall, Soderhaum, and one or two Mediterranean ports. The quantity was small, amounting to 1513 tons from Cardiff, and 975 tons from Newport. It is said that at Dowhals a new steel rail mill is to be erected, but the rumor wants confirmation, especially under present conditions of trade. South Wales bars are being sent into other than local markets at £6. 5/ to £6. 10/per ton. Think of that, my friends, and wonder.

THE METAL MARKETS are still very quiet, in part owing to the unsettled condition of politics.

The Mining Journal remarks: "Copper.—
The market opened very quiet at the commencement of the week, Chill bars, g. o. b., being quoted £77 to £77. 10', ordinary cash terms. The charters from Chill during the least fortight in May, having been announced terms. The charters from Chili during the last fortnight in May having been announced to be only 1100 tons of bare, of which 1050 were for this country and 50 tons for the Continent, the market assumed a firmer appearance, and all descriptions of copper were steadily held at current quotations, but buyers not being willing to launch out upon the favorable announcement of small charters, actual business was very limited. He to Thursdow last this configured to ment of small charters, actual business was very limited. Up to Thursday last this continued to be the condition of the market, but upon that day the firmness which had characterized sellers gave way, and efforts were made to quit holdings in Chili bars and Australian copper. The amouncement of a further sale of 1800 without the handles; thus they take up less

tons of Wallaroo copper on the 27th inst.by public auction tended rather to depress the market, as it is surmised that the whole of the last sale has not yet found its way into consumption, and to day's market is very quiet indeed, Chilibars, g. o. b., being quoted £77 to £77. 10/. English tough, £83 to £84; best selected, £84 to £35; strong sheets, £89 to £90; India, 4 by 4, £88; Australian copper, £82. 10/. Lead.—
The market continues to be very flat, and good soft English pig is obtainable at £21. 5/, and soft Spanish, without silver, £20. 15/. Spetter.—The demand for Silesian is sufficient to support the market, which is steady at £23. 10/, and English hard spelter rules about £18. Zinc.—During the week 120 tons of London rolled was oftered at public auction, of which 80 tons found buyers at £27. 10/, or a reduction of 10/ upon the previous sale. Quicksiler.—The market continues quiet, and £9 has been accepted to day. Tin.—This metal has been quiet during the week. The speculative feeling which was apparent some little time ago has completely subsided, and is not likely to be renewed—the fallacy of attempting to raise the value of a metal which is encumbered with a burdensome stock in days of such general stagnation having been proved. Straits tin has been offered to-day, both on the spot and for locking up when not in use, as detached, they occupy little space. 7. Economy.—One pick does the work of four or diverdinary picks before becoming dull. Two or three picks (which may be of different weights) and one handle are sufficient outiff for a collier, where eight or ten ordinary picks would be required." The picks on exhibition are full polished. The solvets for the handles are made of malle-able iron, samples of which are shown bent under great pressure, and free from fracture. Surmounting this exhibit, which is tastefully arranged, is the motto "The pick is mightler than the sword."

HOOPES & TOWNSEND,

Philadelphia, make one of the most interesting which is a characteristic process will shortly ensure th mand is still very sluggish; and, although the make is restricted as much as possible, stocks are on the increase, and prices decline. I. C. coke plates are quoted 18/ to 19/ per box.

The following are the latest Liverpool prices:

	£	8.	d.	£	8.	d.
Merchant bar	7	0	0 3	7	5	- 0
Merchant bar, in Wates	6	10	00	6	15	0
Staffordshire	7	10	00	10	15	Ö
Ноор	8	10	00	9	10	0
Sheet	10	10	00		10	- 0
Nail rod	8	0	UCA		0	- 0
Bar, best crown	7	10	00	8	10	0
Boiler plates	10	0	00	11	10	000000
Charcoal, I. C Coke, I. C	0	19	60	î	6 2	6
Copper: Delivered in			- 6	for	. *	U
copper, southeres sie	£.	a pou	d.	D.	B.	0
Bolt and Sheathing	91	0	00	0	0	o
Tile	85	0	00		0	0
Tough cake		0	00		0	0
Best selected	86		00		0	0
			- 69	-		

Machinery Hall.

PECK BROTHERS & COMPANY. The most complete assortment of racking,

globe and lock cocks, such as are dealt in extensively by the hardware trade, that we have seen at the Centennial, is exhibited by Peck Brothers & Co., New Haven, Conn., and No. 73 Beekman street, New York. These goods are shown in great variety. Their lock cocks are all provided with the improved small key, recently introduced by this house, and which we are informed has become very popular. In cocks for water coolers they show an immense variety; we counted in plated goods alone of this class over 40 patterns. They also exhibit some very handsome double bath cocks, of which nine distinct patterns are shown; some of these are provided with gold-lined jewel holders, others with fancy acorn tops, and all of them are conspicuous for elegance of design and superior workmanship and finish. We also noticed in their case 46 patterns of basin cocks in nickel, silver plate and brass, and a complete assortment of chain stays to match. Beside the brass cocks, already referred to, they exhibit a large variety of lager beer cocks of the heavy pat tern required for this trade. These goods, which are a specialty with this house, are shown in 15 patterns. They also exhibit hose pipes and couplings, compression, plug, plain and screw tips, with hose sprinklers and couplings, of all sizes; some handsome beer pumps, a full line of bydrant cocks, steam fitters' and brewers' goods, butlers' pantry cocks in large variety, with and without glass bolders. This house also makes a specialty of corporation stops, and they exhibit these goods in all the various patterns required by different cities throughout the country. They are shown with and without eel traps, and in size 1/2 to 2 inches diameter. Some idea of the extent and detail that Messrs. Peck Bros. & Co. exhibit in their

Sheffield, England, exhibit for the first time in steel picks, with interchangeable handles, for mining, quarry, railroad and other purposes. They also exhibit steel hammers, sledges, spike mauls, &c., all of which are arranged for pick. We take the following from their circular, showing the advantages claimed for these the ordinary pick, and the blow more solid. 2. Portability. - One handle only being required for any number of picks, and this need seldom be brought out of the mine, unless used as a walking stick. 3. Firmness.-Of the picks upon their handles. No amount of work can loosen them, or move the tool out of right angles with its handle. 4. Strength .- Both for cutting and "prizing" they are much stronger than the common pick. 5. Durability.—In the mines of Great Britain, where these picks are ordinary picks require re-steeling every six to the trade. months, or oftener. The handles are of the choicest American hickory, and are protected sole proprietor of the genuine lightning saws,

pavilion of neat and tasteful design, constructed throughout of polished walnut, incloses a floor space of over 300 square feet, and has a hight of 18 feet. To its sides are attached bolts and nuts of every conceivable form and size; irons for railroad car trucks; forgings, etc., for buildings, flat link chain for ele vators, etc., all artistically arranged so as to strike the eye in the most pleasing manner. On the floor of the space (which is covered with a rich welvet carpet) are a series of bins filled with the varied manufactures of this firm, in order that thee may be handled and critically examined by those interested in this class of goods. The design of one of the walls of this inclosure is worthy of special mention. The initial letters of the thirteen original States form an arch. These letters are formed with bolts and the arch is outlined with a flat link elevator chain. The keystone of the arch is HARDWARE AT THE CENTENNIAL. formed of boiler rivets. The keystone is the copyrighted trade-mark adopted for these rivets, and the whole form a design at once appropriate and effective." The display of rivets is very large, including cone head, button head, countersunk button head, countersunk flat head, etc., from No. 10 to 13/4 inch. They also show taps and dies, car irons, belt bolts, railroad track bolts and bolts in the following varieties: square head, hexagon head, button head, button head square countersunk, button head square under, blank bolts, bolt ends, etc.; rods for roofs and bridges, and swivels for 1/4 to 31/4 inch rods, pipe swivels, building frons, wood screws, set screws, patch bolts, elevator chains, forged nuts, cold pressed nuts, both square and hexagon, from 1/4 to 2 inch. They also exhibit sections of boiler plate showing difference between hand and machine riveting. A bar of fron 1% inches thick, punched cold with a 7-16 punch; the length of the punching, which is also shown, is compressed to barely 34 inch. This is one of the most remarkable exhibits of cold punching we have seen.

#### CHARLES PARKER,

Meriden, Conn., exhibits a large assortment of parallel vises; he also shows a full line of ' Hall's sudden grip vise," which was awarded certificate at the Vienna Exposition in 1873. RUMSEY & CO.,

Seneca Falls, N. Y., exhibit pumps of almost every conceivable description in immense variety. They show about 300 styles of common cistern and force pumps; a large variety of brass single and double action house force pumps; an assortment of steam boiler feed pumps; ? sizes of bydraulic rams in iron and brass; one hydraulic ram in operation; a full line of fire pumps for factories, mills, &c. : 10 varieties of ship pumps, from the smallest size horizontal pump for deck use to the largest ships' main bilge pump, with two balance wheels. They also exhibit a variety of rotary force pumps for hand or power; one rotary force pump in operation, throwing a 4 inch of this business will be inferred from the fact stream; eight sizes of centrifugal pumps, one of which is in operation, throwing a 6 inch case 1000 different patterns of cocks. The goods stream; eight varieties and sizes of engine well are very tastefully arranged, and are, all of pumps, combining the properties of a lifting them, specimens taken from their regular force pump and an ordinary well pump. They further show a large assortment of closed top iron pitcher pumps, which are among the leading specialties manufactured by this house; a this country a very large assortment of cast variety of brass molasses or hot water pumps, which find a market in South America and the West India Islands: a number of styles of well and force pumps for attaching to wind-mills; a very handsome line of mounted force pumps use on the same handle that is supplied with the for house use in brass and iron; drive well points and all the necessary appliances. Beside their immense assortment of pumps, they extools: "1. Effectiveness.-The picks being of a hibit their hand corn shellers, which resemble special cast steel, will attack the hardest materi- in appearance the well known Burrell corn als daually found in mining, without yielding or sheller; farm and factory bells in ten different breaking; the cut is much keener than that of sizes, from 40 to 1200 pounds. In another department of Machinery Hall they exhibit a variety of fire engines, centrifugal pumps for use in tanneries, mines, &c. All the goods exhibited by this house are well finished, and are fair specimens of the regular goods dispensed to the trade.

THE BAILEY WRINGING MACHINE CO., New York, show a handsome assortment of Simpson's adjustable parallel vises. Of these goods fifteen different sizes are on exhibition, among which we notice three small sizes for in extensive use, they are found to last four or fine work, faished in nickel plate. All the five years without needing repairs, while the others are shown in the ordinary finish known

from wear or injury, where the ordinary pick No. 80 Beekman street, New York, exhibits a handles usually wear or break by the malleable large variety of saws, files, etc., in a very tasteiron socket, which is a fixture upon the handle. ful and attractive manner. His display is situpleasing contrast to the polished steel and their portioned. The goods exhibited by Messrs. surroundings. On one side of this structure there is a door leading into the interior, which is haudsomely lined and carpeted, and which forms a convenient office. On the side fronting the Corliss engine is shown a large circular saw with lightning teeth, and surrounding this is a handsome set of segments for cutting veneers, the teeth of which are of the ordinary pattern. Surrounding the circle, very tastefully arranged, are samples of hand, panel, back, butcher, compass, and pruning saws, billet and turning webs, mill saws, plt saws, one man cross-cuts, and the new Centennial lightning cross-cut, patent of March 28, 1876. On other panels he exhibits in great variety files specially adapted for filing the patent lightning and other saw teeth, which require files specially adapted to their shape. We also noticed a combined patent file and saw set; patent saw han dle for hooking to end of one man cross-cut when extra power is required; extension rod loop bandle for cross-cuts, patented in March last; patent side grasp saw handle; lightning pole and hand pruning saws with two edges patent cross bar wood saw frames; patent se for setting points of teeth same as with a hammer and anvil, arranged as simply as a pair of tongs, etc. On the top of the structure is shown a lightning cross cut saw, on which is printed in gilt letters "23 cords of wood sawed by hand in eight hours with this saw." tastefully arranged arches over each of the four sides, and making a handsome finish to the top of the structure, we find the following (Mr. Boynton calls them "mottoes"), in gold letters on black walnut ground: "Business! \$1000 to match the lightning saw;" "Lightning is the only patent saw vindicated by U. S. Courtbeware!" "12 inch log cut in eight seconds with hand cross-cut saw;" "16 inch log sawed with hand lightning cross-cut in 17 seconds." In the display of saws mentioned above Mr. Boynton shows, in addition to his special goods with lightning patent teeth, a large variety of hand and other saws with common teeth and in various grades.

#### Main Building.

THE LALANCE & GROSJEAN MFG. CO.,

No. 89 Beekman street, N. Y., make a large and very interesting exhibit of deep stamped and japanned tin and sheet iron goods. They also show an immense variety of marbelized enemeled ironware, which they claim is unequaled for durability and cleanliness, standing intense heat, and not being susceptible of injury from aci is of any kind. In this ware they exhibit long handled frying pans, fluted gridirons, oval, round and square baking dishes, sauce pans both lipped and covered, cullenders, fluted and plain cake molds with and without tubes, pie plates, preserving kettles, wash basins, dish pans, spittoons, water pipe and elbows to be used instead of tin leaders, &c. The same patterns of goods are also shown in blue and white eramel and in decorated enameled ware; they also exhibit plates, oval and round dishes, &c. Handsomely contrasting with the gray blue and white enameled ware described above is a beautiful assortment of planished copper and tin uros, soup tureens, chafing and oyster dishes, &c. In japanned ware they ex hibit tollet sets in elegant designs, some beautiful specimens of decalcomanie, water coolers, japanned tables, jardiulers, &c. In retinned deep stamped goods they make a very handsome display, showing many specimens of deep stamping which are absolutely marvelous. They also show a large assortment of tinned and enameled basting spoons, tinned forks, ladies, both plain and pierced, copper saucepans, sugar scoops, both tinned and brass, brass preserving kettles, tinned and copper tea kettles, tea and coffee pots, and a large variety of mis cellaneous goods in tin, copper, iron and japanned ware. Taking into consideration the fact that Messrs. Lalance & Grosjean Mfg. Co. had very recently the misfortune of losing by fire the best equipped factory for the production of their specialties in the United States, if not in the world, the magnificent display made by them is creditable not only for its intrinsic merit, but as an evidence of pluck and energy in overcoming great obstacles in a very short

WILSON, HAWKSWORTH, ELLISON & CO., Sheffield, England, exhibit table and pocket knives, the former in pearl, ivory, bone, buf falo and composition handles; butcher knives and steels, fine scissors, &c. They also show fine finished machinists' hammers, specimens of steel, flat, square, round, octagon, threesquare, &c.; socket firmer chisels and gouges with blued and bronzed sockets; turning chiscle, drawing knives, screw drivers, spoke shaves, plane irons, batchets, mattocks, carpenters' squares, files and rasps, steel wire, and a very handsomely finished specimen of beavy car springs. The carpenters' tools in this exhibit are finished in the very highest possible WARD & PAYNE.

Sheffield, England, exhibit in a very tasteful manner an immense variety of earpenters', engravers' and carvers' tools, sheep shears, &c. In tanged chisels and gouges they show regular firmers, long thin paring chisels, turning chisels, firt and hollow sweep gouges. They also show a monster firmer chicel with hand some rosewood bandle and a gouge to match with boxwood bandle. The assortment of wood carving and engraving tools in this exhibit is very full and complete, comprising almost every imaginable variety of these goods. They also show augers and gimlets, wood stock | hibited in this country for the first time. plated bit braces of the well remembered English patterns, assorted boring bits, screw driv ers, spoke shaves, carpenters' squares and levels, spirit levels, marking gauges, &c.; coopers', carpenters' and coach makers' draw ing knives, molders' and plasterers' tools, brick hundred pieces. and plastering trowels, hitchets, broad axes, mattocks, cleavers, &c., and an immense screw Hagen in Westphalia, Psussia, show a case of regularly far up the Amazon, and have explored

shown are covered with black velvet, forming a driver of exquisite finish and beautifully pro-Ward & Payne, while showing care in all of their details, are presented with no higher finish than it is reasonable to expect on first-class

GEORGE WOSTENHOLM & SON,

manufacturers of the celebrated I. X. L. brand of pocket cutlery, etc., Sheffield, England, show a hand: ome assortment of the finer patterns of pen and pocket knives, scissors, razors, etc. They show in their case medals from Paris, 1855 and 1867, and from the London Exhibition

JAMES BURNAND & CO.,

Leicester Works, Sheffield, England, exhibit handsomely finished table knives in ebony, ivory, plated and pearl handles. In table knives only about a dozen patterns are shown. The display of hunting knives in this case is large, handsome and well assorted, a great many sizes being shown. They also exhibit a few samples of pocket and pen knives, nut picks, farriers knives, cigar and pruning knives.

BROOKES & CROOKES, Atlantic Works, Sheffield, England, have on exhibition a case of fine cutlery very tastefully arranged; all the goods shown are of the higher grades. In pocket knives they show ivory, pearl, buffalo, shell and stag coverings; some very handsome specimens of pocket knives with seissors and other useful articles in com bination. They also show table knives with ivory, pearl, stag, buffalo, self-tip and ornamented ivory handles. Scissors and other goods in cases, cork screws, button books, champague knives, handsomely finished razors in cases of these cases of ivory; hunting brives of exquisite finish with carved ivory bandles, picnic knives, forks and spoons in cases, and razors in great variety. All of the goods exhibited by Messrs. Brookes & Crookes are well finished, and in this respect will compare favorably with any similar goods that we have examined.

J. B. ADDIS & SONS

Sheffield, England, whose reputation as manufacturers of the best quality of wood carvers' and engravers' tools is world-wide, show, in a and variety. The goods are tastefully arranged.

No. 71 Portland street, London, England, exhibit surgical instruments in great variety. They also show a beautiful assortment of fine pocket knives, scissors and razors; but these than Sheffield goods of the same class, are comparatively unknown in this market. HERMANN BOKER & CO.,

Solingen, Prussia, and Nos. 101 and 108 Duane street, New York, make a very fine display of glass case, devoted entirely to fine shears, scissors and kindred goods, is shown a handsome card of scissors of elaborate design and exquisite finish; this card, the ground of which is white cloth handsomely bordered with Russia leather, contains two rows of scissors inclosing their trade-mark. The upper row contains nine scissors, and shows on each, between the bows and blades, a handsomely finished letter in burnished steel, and these placed in part of a circle gives the name of the firm "H. Boker & Co." The lower row of eight scissors have the same style of letters, forming the word "Solingen." These scissors are attached to the card by means of steel clasps over the blades, and the bows are held in position by miniature seissors in the form of spring clasps, the effect of which is pleasing. Among the varieties of scissors exhibited by this house, we notice ladies' fine pointed and embroidery goods, in a great many sizes and patterns; nail scissors, round points; a beautiful line of ladies' shears; seissors for surgical purposes; bent shank and blade scissors for horse clipping; scissors in cases in great variety. Some of these are shown with hows covered with ivory, pearl, leather, etc. The above mentioned goods bear the test of careful eximination; the styles are good, and the finish will compare favorably with the choicest productions from Sheffield, petition. To enumerate and describe the arti-In another case they show a large assortment are shown in all the varieties of shape and coverings required in this market. They also exhibit pocket knives in combination with scissors, cork screws, button hooks and other convenient articles, six large show knives contain ing an immense variety of blades and tools. The handles of these are very beautifully carved, and are covered both in ivory and

T. HESSENBRUCH & CO.,

Ronsdorf, Prussia, and North 5th street, Philadelphia, exhibits hand and jewelers' vises, cutting plyers in several styles, carpenters' pincers, round and flat nose plyers and kindred goods also an assortment of pocket knives and scis

Altona, Hamburgh, has on exhibition a very fine assertment of pocket knives, a great many of which are shown with cork screws and other articles of frequent use. He also shows some tine samples of scissors, razors, ivory carvers, and we are informed that he will soon have on exhibition a full line of table knives. He shows medals from the following expositions: Altona, 1869; Moscow, Russia, 1872; Vienna, 1873; Luxemburg, 1875; Cologne, 1875; Custrin, Prussia, 1875. These goods are ex-

J. S. HOLLER & CO., Solingen, Prussia, exhibit a very handsome as also exhibit one large knife containing one

B. & H. VORSTER,

hooks, east steel hoes, etc. These goods are well finished, and we notice many of the tools, particularly the axes, are made and finished precisely in accordance with our American pat-

No. 49 Chambers street, New York, exhibit, in two very handsome cases, a large variety of the sea, and boats that leave Para can penetrate their patent ivory and real ivory handle I table and dessert knives, carvers, &c. These goods are shown both in steel finish and with silver plated blades. They also show the rather popular styles of table knives, with solid steel handles, and full plated; handsome table and dessert knives, with pearl handles; nut picks, butter knives, &c. In rubber handled table cutlery, a leading specialty with this house, a handsome assortment of goods is exhibited. They warrant these handles not to be affected by hot water. Beside the goods above mentioned, they have on exhibition an assortment of the medium grades of table cutlery, with rosewood, ebony and bone handles, having handome pickel bolsters. In a counter case they show a pair of carvers over six feet in length, handsome sets of pearl, ivory and patent ivory handled plated knives, carvers, &c., in cases, and some beautiful samples of carvers with carved ivory handles.

JOHN RUSSELL CUTLERY COMPANY. The magnificent display of table cutlery

shown by the John Russell Cutlery Co., Green River Works, Mass., is conspicuous, not only on account of the beautiful finish of the goods, the good taste exhibited in their arrangement, and the splendid cases which inclose them, but for completeness in the matter of assortment it would be difficult to suggest how this exhibit could be improved. The goods of this company are shown in all the different grades. from the commonest scale tang table kuife without bolster to the most costly and elaborate goods in ivory and pearl handles. In knives and forks with white bone handles and nickel bolsters a large assortment is shown, and it is Brazil and Peru and Colombia and other South pleasant to notice in this, as in nearly all the American States at the Centennial, incomplete exhibits of American cutlery, that we have exvery small space, a handsome assortment of amined, the care of our manufacturers in the acquisition of this trade, even as it is, is a their goods in almost every conceivable shape the matter of detail. We reter particularly to the fittings of bolsters and scales, the by consideration of the exports we now make finish of steel forks in the arches of the tines; from the cheapest grades to those goods which adorn the tables of the opulent, certain to attain, there should be no delay in all bear the same evidence of neatness and accuracy. Beside the goods above mentioned we noticed complete assortments of table knives goods, we were informed, being higher priced in abony and cocoa wood handles; ivory handled table and dessert knives, and carvers in great variety; every size of French cooks' knives; glaziers', vegetable and butchers' knives; pallette knives, nut picks in silver and gold plated handles, the same in pearl and scissors and pocket knives. In the center of a livory, both steel finish and plated; cheese scoops, butter knives, butchers' and table steels, &c. They also show in great variety ivory and pearl handled table, dessert knives and carvers in handsome cases. There is nothing on exhibition that shows more clearly the wonderful growth of this industry in the United States than the display made by the John Russell Cutlery Company, and we are pleased to add that the goods are in our opinion fair samples from

their regular stock. THE D. R. BARTON TOOL COMPANY make a characteristic display of their manufactures, at once varied, neat and good, and which, to the mechanic, is irresistibly attractive. The ease in which the exhibits are shown is of black wa'nut, with heavy moldings, free from ornamentation except on the upper part, which is richly carved. At the center, and above the exhibits, there is a large portrait of the founder of the firm, the late D. R. Barton, and on each side are inscriptions giving the name and ad dress of the firm, date of organization, trade-mark, etc. The space occupied covers an area of 128 square feet, and the exhibit is one of the most varied and extensive of its class. We are informed that the goods exhibited were taken from their usual stock, and are in every respect such as they ordinarily manufacture, not a single article being got up for the occasion. The exhibitors enter them for comcles exhibited by this firm would require a carpenters, coopers, shipbuilders, makers, &c. We may name a few articles, such as planes, grooving plows, boxwood, rosewood and ebony handles, molding tools of various kinds; broad axes, hand sxes, hatchets, adzes, drawing knives, chisels, slicks and gouges, coopers' adzes, champer knives, spokesh ives, scrapers, caulking mallets, caulking irons, plane irons, and hammers of every description. They have also butchers' tools and edge tools for almost every conceiv able purpose, and in great variety.

#### South American Trade.

The Philadelphia North American says: The visit of the Emperor of Brazil has excited new interest here in the political condition, the agriculture and commerce of Brazil and all South America. That portion of the continent is now more at peace and gives better promise of continuing peace and industry than at al most any former period. It has received very considerable accessions of population from En rope and the United States in the last ten years: and these accessions, distributed along both oceans and settled near the Caribbean coast are giving material aid to the development of resources as varied, great and desirable as attract to Australia, Africa or Asia. English, French, German, Spanish and Italian commerce soriment of fine quality pocket knives and has sought the business that exists and en-scissors, razors, hunting knives, etc. They larged it, so that regular steamship lines ply where recently sailing vessels were rare; so that a railway is crossing the Andes and another skirting the Atlantic; so that steam boats ply

corn and cane knives, axes and hatchets, broad the Madeira and Negro and serve on the Par- occupying the same rocking chair and talking early and permanent profit.

Putomayo River, an affluent of the Amazon, whose sources are very near those of the Magthe whole northern boundary of Ecuador by this new route, as they have skirted the southern and entered Peru by the Ucayali. The Putomayo is the stream by which the explorers on the Magdalena in search of a canal route to the Pacific thought the commerce between the Pacific and Caribbean Sea might be connected with Atlantic trade; and Mr. Simpson's report, verifying that supposition in some measure, shows the ease with which all the interior of the southern hemisphere can be opened. This Ecuadorian business is now neglected or drawn in small amounts to Venezuela and Colombia.

The specific fact runs with general reasons that urge early and earnest efforts by this country to gain more business in all parts of South America. Much has been done. Very recently American manufactures won numerous prizes at the exposition in Santiago; and, above the mere success, advertised the superiority of American skill and the advantages of American trade where this knowledge is most needed, and where its products will be most profitable. Peru and Chili and Brazil and the Argentine Confederation are annually ordering more manufactures hence in return for the coffee and quinine and hides and dyes and rich woods and various products taken. Their merchants find their way here, notwithstanding great facilities for reaching Europe; and it is only necessary that an earnest effort should be made to establish regular intercourse in order to enlarge the trade we have and create new branches, and make all the development there tributary to our welfare. The exhibits by as they are, must convince every beholder that prime object of national solicitude. Augmented and may make against European competition, and of the increase South American trade is striking boldly and resolutely for an advantage of the first order.

A Romance of the Signal Service Bureau.-A correspondent at Washington tells the following veracious anecdote: I heard a couple of days ago a hitherto uppublished romance connected with the life of one of the most prominent officials of the Signal Service Bareau. He was, my informant states, once engaged to be married to a lovely, charming and wealthy girl. The eve of the wedding

exes, mattocks, butcher and shoe knives, bill ana; so that cultivation and civilization are ex- as inanely as only lovers can talk, when the fair tending rapidly and yielding the earnest of one said: "Albert, there is one thing I wish you to do when we are married." One of the latest discoveries is that of the it," he replied, making her feel that her corsets were a mile too large for her. "That is, to have no rain on Mondays, because, you dalena, is navigable by ateambout for 1000 know, darling, that Monday is washing day, and miles. It enters the Amazon 1700 miles from if the things are not washed and dried then, the week's work is so fearfully put back. You The young man's will, wont you, my own?" heart was torn, but he replied : "Maud, dearest, my duty to my bleeding country demands imperatively that I shall whoop her up the precise sort of weather that heaven will probably send impartially during the next twenty-four hours upon the just and the unjust, without regard to age, sex or previous condition of servitude. If an area of barometric disturbance exists in the Middle States on Monday, how can I consistently with my duty declare that the probabilties favor clear weather with light winds from the southeast? No, angel; ask me anything but that. I could not love thee, dear, so darn much, loved I not honor more." "Then you do not love me," she sobbed, bursting into tears. The reader will readily understand how they progressed to a quarrel and parted enemies. She returned his presents, and is now lecturing on Woman's Rights, and he is a confirmed misogynist, and sits up all Sunday night at the Signal Service office, with flendish glee making out bulletins for Monday, announcing falling barometers, atmospheric disturbances, heavy

EURERA LATHE, \$9.00.

rains, showery weather, and so on.



WITH FOOT POWER, \$15.00. end for Circular. Manufactured only by

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FOR the convenience of those who may wish to try them, a SAMPLE CARD

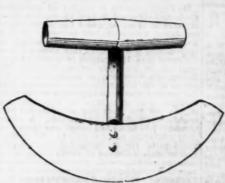
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MARTIN COWLES, Sec. Screw Drivers of all varieties, Box Scrapers, Box

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Positive transmission. Stands Exposure. Noiseless in service.

A Friction. Tension.

Runs Fast or Slow, IIU Stretching. Runs Perpendicularly.

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### L. COES'

## SCREW WRENCHES.

L. COES & CO., Worcester, Mass.



We invite the particular attention of the trade to our New Straight Bar Wrench, widened, full size of the larger part of the so called "reinforced or jeg bur." Also our enlarged jaw, made with ribs on the inside, having a full bearing on the front of bar (see sectional view), making the jaw fully equal to any strain the bar may be subjected to.

These recent improvements in combination with the nut inside the ferrule firmly screwed up flush, against square, solid bearings (that cannot be forced out of place by use), verifies our claim that we are manufacturing the strongest Wrench in the market.

would also call attention to the fact, that in 1869 we made several important improvements (secured by patents), on the old wrench previously manufactured by L. & A. G. Coes which were at once closely imitated and sold as the Genuine Wrench by certain parties who seem to rely upon our improvements to keep up their reputation as manufacturers, and although the fact of their imitating our goods may be good evidence that we manufacture a superior Wrench, we wish the trade may not be deceived on the question of originality. Trusting the trade will fully appreciate our recent efforts, both in improvements on the Wrench and in the adoption of a Trade Mark, we would caution them against imitations.

"L. COES & CO."

Warehouse, 97 Chambers St., & 81 Reade Sts., N. Y. HORACE DURRIE & CO., Sole Agents.



### CAST BRASS BUTT HINGES, Brass Rim & Mortise Locks, Ice House Hinges & Fastenings.

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This set of GARDEN TOOLS, | This MOSQUITO BAR is large is put up in a nice paper box, and enough to cover a full size bed. is superior to any other in the It has a nice Folding Frame, best market. The tools are made of quality of netting, with cord and the best quality of Steel, highly ring complete for hanging. It polished, and of malleable iron is as good as those which are polished or painted, with birch usually sold for \$5.00.

We will make it an object for every dealer to handle them. PRICE \$15, PER DOZEN SETS.

PRICE, \$24 PER DOZEN.



#### CENTENNIAL CHAIR.

This Chair is made of the best second growth White Ash, finished on the wood, with Brussels Carpet Seat. It shuts up to the size of a single chair post, and weighs only one pound. Every person who forgets to take one with him when he goes to the Centennial, will be sorry when he gets there, as no chairs are provided for visitors, and they get very tired. Every store in the land can sell a few of them at a profit. They

PRICE, \$12 PER DOZEN.



## MILLERS FALLS CO., 74 Chambers St., N. Y.

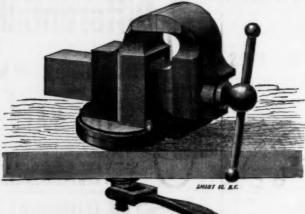


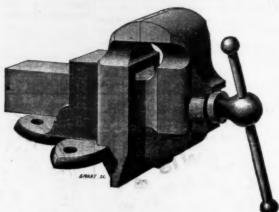
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THESE GOODS ARE SOLD BY THE GENERAL AGENTS (with special discounts to the trade).

New York,—Messrs. J. CLARK WILSON & CO.—RUSSELL & ERWIN MFG. CO.—Messrs. HORACE DURRIE & CO. Boston.— Messrs. GEORGE H. GRAY & DANFORTH. Philadelphia.—Messrs. JAMES C. HAND & CO. Baltimore.—Mr. W. H. COLE. Louisville.—Messrs. W. B. BELKNAP & CO. FISHER & NORRIS, Sole Manufacturers, Trenton, N. J.

## Simpson's Adjustable Parallel Vises.





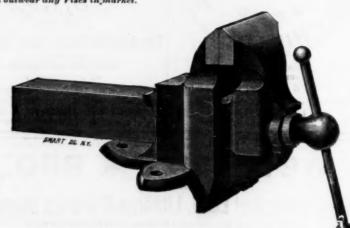
The Jaws can be instantly opened or closed the full length, by one movement of the hand, without the use of the screw. They combine the QUICK ADJUSTMENT with all the advantages of the best Screw Vises, holding the work with as slight or firm a gri; ay be desired, without any liability to jar or work loose, as is the case with other adjustable vises.

The Screw being used merely to give the grip, they will outwear any Vises in market.



Their extreme simplicity constitutes one of their

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Hunting, Short and Long Range Target Rifles. For STEAM,

### SCHOVERLING & DALY,

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Standard O. K., F. & W. Double Action, Wesson & Harrington new line Revolvers. Send for Reduced Price List.

ESTABLISHED 1823.

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Sole Agents in the United States for FOREHAND & WADSWORTH'S NEW MODEL SWAMP ANGEL and other Revolvers.

CREEDMOOR SEVEN SHOT NICKEL PLATED, The Cheapest Revolver made. CREEDMOOR, 32-100 REVOLV: RS.

CREEUMOUR, 32-100 REVOLV: RS.

COLT'S New Line, 22-100, 30-100, 32-100, 41-100.

COLT'S ARMY REVOLVER 45-100, adopted by Texas, the United States, and other governments. (ENTENNIAL REVOLVERS, 22-100, 33-100, 38-100, 41-100.

SHELLS, WADS, CAPS, GUNS, &c., in the largest quantities. Special inducements to large buyers.

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Wrought Iron PIPE,

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**Brass & Iron** STEAM Gas & Water FITTINGS. PLUMBERS'

MATERIALS. STEAM GAUGES, TOOLS,

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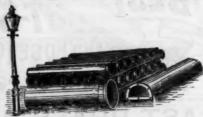
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### The Iron Age Directory

and Index to Advertisements.

	_
Alarm Whistles and Speaking Tubes. Fredricks C. A., 88 Fulton, N. Y Ostrander W. R. 19 Ann, N. Y	
Agricultural Steels and Irons, etc., Makers Keilis, A. J. & Co., Pittsburgh, Ps.	Qf.
Alarm Tills. Tucker & Dorsey, Indianapolis, Ind	1
Antmal Pokea Bishop & Benedict, Berea, O	
Anvils, Manufacturers of. Fisher & Norris, Trenton, N. J	
Angers. Bits. etc., Manufacturers of. Clark Wm. A., Westville, Conn The Cong. Valley Mfg. Co., Centerbrook, Conn The Douglass Mfg. Co., 62 Reade, N. Y.	
Axes, Edge Toels, &c., Ranufacturers of Jones, M. H. & Co., Cohoes N. Y	
Axtes, Springs, etc Manufacturers of. Brown D. Arthur & Co. Fisherville, Concord, N. B. Cook R. & Sons, Winsted, Ct. Spring Perch Co., Bridgeport, Conn Tomlinson Spring & Axie Co., Bridgeport, Conn Hotokiss Guy U., Fran & Co., Brokkyn. E. D	
Axle Greas. Makers of Fracer Lubricator Co., 104 Maiden Lane, N. Y	
Band waws and Tools for Brazing &c., porters or. Gueutal George & Son. 39 W. 4th. N. Y	18
Barn Dear Hangers. Moore S. h. & E. Y., 68 Lake, Chicago	
Bed Screws. Maker of. Shelton Co., Birmingham. Conn	
Bellaws. Manutacturers of. Churchyard. Joseph. Buffalo, N. Y. Newcomb Bro's., 586 Water, N. Y. Sectt Geo. M., Chicago, Ill.	
Bella Baltimore Bell and Brass Works, 53 and 55 Hol- liday, Baltimore, Md Williams E. A. & Son, 107 Plymouth, Jersey Cl	ty.
N. J	

Blind Hinges.
The Holbrook Patent Blind Hinge Mig. Co., Water town, N. Y. Beiting. Leather. Makers or. Alexander Bros. 412 N. 3a., Phils. Arny Charles W., 143 N. 3d, Phils. Forepaugh Wm. F., Jr, & Bros., Phila Bird Lages, Makera or. Lindeman O. & Co., 254 Pearl, N. Y. Maxneimer John, 249 Pearl, N. Y. Osborn Mig. Co. 79 Bleecker, N. Y. Bit Braces Manufacturers of . Milier's Fails Mfg. Co., 74 Chambe Blowers. Makers of. Keystone Portable Forge Co., Phils Bolt Machines. Makers of Formith S. C. & Co...

Reystone Portable Forge Co., Philadelphia.

Bolt Machines. Makers of
Forgath S. C. & Co.

Boye X.

Prizer Chas. & Co.. New York.

Braas Hutta. Makers of
Tiebout W. J., 20 Pearl, N. T.

Brass. Manufacturers of.

Tiebout W. J., 20 Pearl, N. T.

Brass. Manufacturers of.

Miller Edw. & Co., 20 Pearl, N. T.

Manhaitan Brass Co. 23 Pearl, N. T.

Manufacturers of. Manufacturers of.

Miller Edw. & Co., 4 Warren, N. T.

Phomix Brass and Iron Foundry, Alientown, Pa. 4

Plume & Atwood Miz. Co., 20 Barelay, N. T. and 96 John,

Waterpury Brase Co. 23 Sectuan N. T.

Brick Presses. Makers of.

Carnell F. L. & D. B. 1846 Cermantown Ave., Phila. 34

Schantz Marcus Perth Amboy, N. J.

Bridge Builders.

Moselvy Iron Bridge and Roof Co., 50 Dey. N. T.

Brucker R. M., 117 John, N. T.

Brucker R. M., 118 Bridge, N. J.

Casters. F. W., 118 Broders of.

Carreller R. Makers of.

Smith H. D. & Co., Plantaville, Cl.

Carreller H. Makers of.

Carter Wheels, etc., Manufacturers of.

Tovenend, Wilson & Hubbard, Phila.

Con theels, etc., Manufacturers of.

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Con Halle & Harbeson, 118 Green John, N. T.

Buck Bros. Milloury, Mass.

Chilled R. Gils.

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Sidney Shepard & Co., Buffalo, N. Y...
Coal Hods, Manafacturers of.
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Coffee and Spice Millis.
Lane Brothers, Millibrook, N. Y.
Enterprise Mfg. Co., Philadelphia, Pa...
Coffee Kanster.
Mesercan J. & W. T., 62 Duane, N. Y.
Companses and Dividers, Manafacturers
Bemis & Call Bardw. & Teol Co., Springfield
Company.

Cempasses and Dividers, Manufacturers of Bemis & Call Hardw. & Teol Co., Springfeld, Mas Compound.
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Cenpering Teols, etc., Dealers in.
Little Chas. E., 19 squiton N. Y.
Corrugated iron.
Moselsy from Fedge and Roof Co., 5 Dey, N. Y.
The Brown Cotton Gin Co., New London, Conn.
Cruchles. Manufacturers of. New London, Conn.
Cruchles. Manufacturers of.
Cruches and Pulverigers.
Greene Levi R. Boston, Mass.
Curry Combs. Manufacturers of.
Boker Hermann & Co., 101 and 105 Duane, N. Y.
Cassell I. N., Fredericktown, C.
Fuluer Brothers. & Chambers St., N. Y.
Lawrence Curry Comb Co., 32 da Arenue, N. Y.
Cottlery, Importers of.
Boker Hermann & Co. 101 Duane, N. Y.
Cottlery, Importers of.
Soker Hermann & Co. 101 Duane, N. Y.
Cottlery, Importers of.
Cottlery, Importers of.
Soker Hermann & Co. 102 Duane, N. Y.
Cottlery, Importers of.

Rogers & Bro. 203 Broadway, N. Y. 11
Ward Aaline, im Danne, N. Y. 11
Wilson Hawksworth Ellison & Co., 25 John, N. Y. 25
Curlery, Monufacturers of.
Functurans & Aaron. Peoperell. Mass.
Lamson & Goodnow Mig. Co., 55 Champers, N. Y. 11
Minden & Goodnow Mig. Co., 55 Champers, N. Y. 11
Minden & Goodnow Mig. Co., 55 Champers, N. Y. 11
Minden & Goodnow Mig. Co., 55 Champers, N. Y. 11
Minden & Goodnow Mig. Co., 55 Champers, N. Y. 11
Minden & Goodnow Mig. Co., 50 Champers, N. Y. 11
Naugatuck Cutlery Co., 38 Chambers, N. Y. 11
Naugatuck Cutlery Co., 38 Chambers, N. Y. 11
Daving \*Gampers, Minden Minde

The Chion Stone Co., a Exchange, Boston. 32
Emery Closs.
The Union Stone Co., a Exchange, Boston. 32
Emery Wheels. Makers of.
Brady Mg. Co., 30 Plymouth. Brooklyd, N. Y. 33
The Union Stone Co., a Exchange, Boston. 32
Enaumeled Plates.
Lefters Enamel Works, 4ff W. 24, N. Y. 4
Engineers, Machinists, etc.
Henshall James, 1056 Bosch, Phila. 35
Ohl & Hauschild, 57 to 61 Passaic Ave., E. Newark.

On a dangeniu, o wo'r samae Ave, E Ac Envinc nas. W. & Bro, Rensington, Phila... Hartford I oundry sae Machine Co. Hartford Lovegrore & Co., 121 South 4th, Phila... Payne B. W. & Sons, Corning, M. Y.

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Files. Manujaccusers or.
Adamanus File Works, Providence, B. 1.
American File Co., Pawtucket, B. I.
American File Co., Pawtucket, B. I.
American File Co., Se Chambers, N. Y.
Baraett & et., 41 and 68 Richmond, Phila.
Disaton Henry & Sons, Phila.
Draper C. f. & Co., Sing Sing, N. Y.
Beller & Bros. Newark, N. J.
Hiscox File Mfg Co., West Chelmsford, Mass.
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McCoaffrer & Bro., 1783 and 1784 N. 4th, Phila.
Nicholson File Co., Providence, R. I.
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Berry Wm. H. & Co., Woodbridge, N. J.
Berry Wm. H. & Co., Woodbridge, N. J.
Dyke, St., Brooton and Fire Brick. Works, Van
Dyke, St., Brooton, M. W.
Bell & Bacon, Troy N. Y.
Hail A. & Sons. Buffalo, N. Y.
Maurer Henry, 418 East 23d, N. Y.
Kreischer B. & Son. 58 Goerek, N. Y.
Kreischer B. & Son. 58 Goerek, N. Y.
Newkumer Philip, 28d and Vine, Phila
Newton & Co., Albany, N. Y.
Valentine M. D. & Bro., Woodbridge, N. J.
Watson John R. Perth Amboy, N. J.
Watson John R. Perth Amboy, N. J.
Watson John R. Perth Amboy, N. J.
Woodkad Adm. 1638 E. 19th, N. Y.
Woodkad Fire Brick Co., Woodland, Ps.
Flist and Emery Paper and Cloth. Flint and Emery Paver and Cloth. Bac.er. Adamson & Co. 780 Market, Phila

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The American Machine Co., 480 Forges. Pertable, etc. k.eystone Portable Forge Co.. Philadely Place George, (Hurricane) 121 Chamber Founders and Machinias. Sami. J. Cresswell Jr., 812 Race. Phila., F Sami. J. Cresswell Jr., 812 Race. Phila.
Foundry Kneings.
Cutler & Brown, 288 Cherry, N. Y.
Paxson J. W. & Co., 514 Beach, Phila...
Waish J. P., 121 Chambers. N. Y.
Whitehead Bros., 517 W. 15th, N. Y.
Furnaces. Maters of
Richmond & Potts, 119 S. Fourth, Phila.
Casyanized From.
Lefferta Marshall Jr., 90 Beekman, N. Y.
Goorg Bellis. Maters of
Edw. Sweeney, 4 Duane, N. Y.
Governors.

Edw. Sweeney, a Daniel Governore, Marchael Governor Co., Lawrence, Mar Junius Judion & Son. Rochester, N. Y. Shive Governor Co., Bethlehem, Pa.... Grate Bars, Vanderbit Geo., foot W. 13, N. Y..... Valuerout 620., 700t W. II. N. I Grindstones. Parker Gilbert, 225 Market, N. J. Wood Water R., 288 and 28 Front, N. Y Worthington & Sons. North Amberst, O.

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Ocaccabona revensed & Co., 26 Reads. N Y. 39
Department of Co., 26 Reads. N Y. 39
Hardware Imported & Co., 26 Reads. N Y. 39
Field Alfred & Co., 26 Chambers. N Y. 39
Field Alfred & Co., 26 Chambers. N Y. 39
Field Alfred & Co., 26 Chambers. N Y. 39
Field Alfred & Co., 26 Chambers. N Y. 39
Field Alfred & Co., 26 Chambers. N Y. 39
Field Alfred & Co., 26 Chambers. N Y. 30
Field Alfred & Co., 26 Chambers. N Y. 30
Field Alfred & Co., 26 Chambers. N Y. 31
Turnor R. A. 72 Chambers. N Y. 31
Turnor R. A. 73 Chambers. N Y. 31
Farret Socar, Newark N J. 31
Barbet Oscar, Newark N J. 31
Biglin Fhilip S., 35 Reads. N Y. 30
Corfee Hardware Co., New Haven, Conn. 7
Biglin Fhilip S., 35 Reads. N Y. 30
Miller a Fails Mg. Co., 26 Pearl N Y. 30
Miller a Fails Mg. Co., 74 Chambers. N Y. 30
Miller a Fails Mg. Co., 74 Chambers. N Y. 31
Pratt & Co., Buffalo, N Y. 37
Providence Tool Co., Providence. R. I. 37
The Hull & Belden Co., Danbury, Coan. 39
Union Mg. Co. 30 Chambers. N Y. 37
Van Wagoner & Williams & Beekman, N Y. 36
Wilson Mg. Co., 37 Chambers. N Y. 35
Hardware Specia lities.
Carver John, 23 Montroe, N Y. 35
Hardware Specia lities.
Carver John, 23 Montroe, N Y. 37
Jesup & Sterling, 7 and 3 Cliff, N Y. 39
Leaup & Co., 30 Elm. N Y. 39
Heilew Ware.
Fletcher George W. 110 John, N Y. 41
Herse Nalls, Masers of Ansabe Horse Miller, N N Section, N Section,

Dadgeon Richard. 24 Columbia. N. N. 16c Chaisels. Holden E. J. & Co., 54 Beekman, N. 16c Cream Freezers. Blatchley C. G., 506 Commerce, Phil Issurance, Soiler. Hartford Steam Botler Inspection an

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Spooner & Collins, St. Loris, Mo.
Iron Mailins' Vreeland D., 128 W. 38, N. Y.
Iron. Play, Importers of.
Williamson James & Co., 69 Wall, N. Y.
Iron Play, Standardsherrer of.
Williamson James & Co., 69 Wall, N. Y.
Iron Play, Standardsherrer of.
Williamson James & Co., 60 Wall, N. Y.
Iron Play, Standardsherrer of.
Partothers, 190 South, N. T.
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Gerdand, Brown & Co., Cleveland, O.
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Fuller, Lord & Co., 139 Greenwich, N. Y.
Fuller, Lord & Co., 139 Greenwich, N. Y.
Insurable G., 39 Market Silp, N. Y.
Insurable G., 30 Market Silp, N. Y.
Insurable G., 30 Market Silp, N. Y.
Insurable G., 30 Market Silp, N. Y.
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Indison B. F. Aš and 459 Water, N. Y.
Indison B. F. Aš and 459 Water, N. Y.
Indison B. F. Aš and 459 Water, N. Y.
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Indison B. F. Aš and 459 Water, N. Y.
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Indison B. W. & Co., 25 Mangin St. N. Y.
Indison B. W. & Co., 25 Mangin St. N. Y.
Indison B. W. & Co., 25 Mangin St. N. Y.
Indison J. W. & Co., 25 Mangin St. N. Y.
Indison J. W. & Co., 25 Mangin St. N. Y.
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Indison J. W. & Co., 25 Mangin St. N. Y.
Indison J. W. & Co., 25 Mangin St. N. Y.
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Indison J. W. & Co., 25 Mangin St. N. Y.
Indison J. W. & Co., 25 Mangin St. N. Y.
Indison J. W. & Co., 25 Mangin St. N. Y.
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Indison J. W. & Co., 25 Mangin St. N. Y.
Indison J. Mangin St. N. Y.
Indison J. M. W. Water, J. N. Y.
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Lawn Mowers. Graham, Emien & Passmore, Philadel Leas Pipe. &co., Manufacturers of. Bayley, Farrels & Co., Pittsburgh, Pa. Lend (Shot and Bar.) Sparks Thomas W., 121 Wainut, Phi Levels.
Disston Henry & Sons, Philis
Heuermann W. & Cedar, N. American Lock Mfg. Co., Casenovia, N. Y.... Bohannan Wisson, Broadway and Kossuth, Br

American Lock Mg. Co., Casenovia, American Lock Mg. Co., Casenovia, McCo., E.D.

D. K. Miller Lock Co., 112 Cherry, Philadelphia. Romer & Co., Newark, N. J.

Union Nut Co., 78 Berkman, N. Y.

Yale Lock Mg. Co., 298 Broadway, N. Y.

Machinery, Makers of.

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Eureka Mg. Co., Poston. Mass.

Forsaith S. C. & Co., Manchester, N. H.

Hendey Machine Co., Wolcottsville, Ct.

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Sellers Wm. & Co., 1600 Hamilton Phila.

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Wood Tuomas 2106 Wood Phila.

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Ducreuz, C., 28 Elizabetta, Y.,
Lyon & Fellows Mfg. Co., Williamsburg, N. 1

Machiniata Toolies, Makers,
Blaisdell P. & Co., Worcester Mass.
Lathe & Morse Tool Co., Worcester, Mass.,
Manning H. S. & Co., 111 Liberty, N. Y.
Fasiser Louis, 128 Worth, N. Y.
Van Haagen C. & Co., Phila, Pa.

Machinists,
Hardman James Jr., 71 John, N. Y.
Mailenble Articless, Maker of,
Hammer & Oo., Branford, Ct.,
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Crane U. O., 158 John. N. Y.

Fuller, Dana & Fitz, Boston, Mass.

Graves O. W. 42 Cliff, N. Y.

Glegg H. L. Co., 108 Wainst, Phils.

W. J. Bammond, Pittsburgh, Pa.

Pheps, Dodge & Co., Cliff, Det., John. & Fulton. N. Y.

Purves A. & Son, cor, South and Penn, Phils.

W. J. Bummond, Pittsburgh, Pa.

Pheps, Dodge & Co., 218, Water, N. Y.

Metallurgists.

Britton J. Blodgett 359 Wainut Phils.

Wallsce & Humpbrey, 118 Wainut, Phils.

Metallurgists.

Bin'to J. Blodgett 359 Wainut Phils.

Wetalls, Antl-Friction.

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Bin'ts Smelting Works, Williamsburg, N. S.

"Standard" Metal Co., 21 New Chambers, N. Y.

Wetalls Perforated.

Hayes G., 718th ave.

Metal Roofing.

Hickox Mig. Co., 250 Pearl N. Y.

Went Chapping Machine Co., 166 Chambers, N. Y.

Murray Iron Works, Burlington, Iowa.

Minners' Candless. Makerson

James Boyd's Sons, Io and 12 Franklin, N. Y.

Minning Spikes

Rooeberry Goo., D., Pottaville, Pa.

Mining Spikes
Roseberry Geo. D., Pottsville, Pa. Roseberry Geo. D., Fosselland, Rowark, N. J. Walentine J., 15 Alling, Newark, N. J. Molders' Tools. Carter H. 39 Pearl, N. Y. Carter H. 39 Pearl, N. Y. Mouse Trans. Cartehemalive, Makers Chief R. E., 54 and 35 Fulton, N. Y.

Natia Schoenberger & Co., Pittaburgh, Pa... Nati Pullers. Maltoy, Curties & Co., 34 Reade, N. Y.

Schoenberger & Co., Fittaburgh, Pa.
Nati I Piliers.
Maitor, Curlise & Co., St Reade, N. Y.
Nacisel Pinters.
Colt A. T., 47 Beekman, N. Y.
Hartman John, 375 N. Seventh, Philadelphia.
Manhattan Nickel Works, 16 and 182 Center, N. Y.
New York Nickel Plating Works, 16 and 182 Center, N. Y.
New York Nickel Plating Co., 138 West 25th, N. Y.
New York Nickel Plating Co., 138 West 25th, N. Y.
Roehrig, Fred Win., 217 Center, N. Y.
Wicks & Co., 73 First st., Brooklya, E. D., N. Y.
Wicks & Co., 73 First st., Brooklya, E. D., N. Y.
Wicks & Co., 73 First st., Brooklya, E. D., N. Y.
Wicks & Co., 74 First st., Brooklya, E. D., N. Y.
Wicks & Co., 75 First st., Brooklya, E. D., N. Y.
Witter & Co., 184 Fulton, N. Y.
Note Broker, Cantager, Frankford, Phila.
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Note Broker, Callancer, Y. W. Sand's Wall, N. Y.
Nuts., Holts, etc., Makers of,
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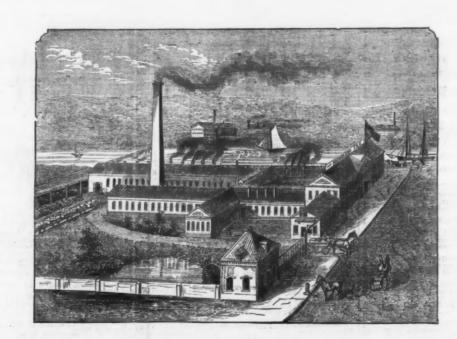
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R. BUSH, 194 19th St., South Brooklyn, N. Y.

### A. H. SPENCER. Solicitor of Patents,

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### HOWSONS'

OFFICES FOR PROCURING UNITED STATES AND FOREIGN

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H. HOWSON,
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Attorney at Law.
Communications should be addressed to the
PRINCIPAL OFFICES, PHILADELPHIA.

Keystone Saw, Tool, Steel and File Works.

Front and Laurel Streets, Philadelphia.

HENRY DISSTON & SONS,
IMPROVED CROSS-CUT AND WOOD SAWS.



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Parali

Canal (Coal, Garante Coal, Garante Canal (Coal, Garante Canal) (Coal, Garante Canal) (Coal, Garante Canal) (Cooler Canal) (Coal) (Coal)

## New York Wholesale Prices, June 28, 1876.

				the plant and the part of the case of the
HARDWARE.	Louse Joint, Narrow and Broad	Emery.	Providence Plate   6 and 8 in. 11c # B !	Plane Teorie Obto Italia
Aprile			Screw Hook and Stran 18, 10, 13 in 9%c   die 40 s	Plane Irons, Ohio Tool Co
Wright's P is gold 10 %c; over 250 ins 11c, gold Armitage's Mouse Hole gold 10 %c gold 10	Loose Pin Japanned	Washington Mills—Regular Nos # 15 80	Heavy Welded Hook \ \ 8 to 12 in. 9\forall c \ dls 30 @ \ 14 in. 4 up, 11 c \ 40 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Plow Bits, Greenneid Tool Codis 10 %
Armitage's Mouse Holegold 10 @ 10 %	Loose Pin. dis 45&10 % Loose Pin Japanned. dis 5&10 % Loose Pin Jap d, Piated Tips. dis 50&10 % DBILLED AND WIRED. Fast Joint, Narrow. dis 20&10 %	the Thomas and the total t	(% 50 1 in., 8%c)	
Wilkinson's W D gold lie Eagle Anvils (American) W D 10c dis 20 9 Apple Parers。	Fast Joint, Narrow dis 22d-10 5  "Broad dis 32d-10 5  Fast Joint, Broad, Japanned dis 32d-10 6  Fast Joint, Broad, Japanned dis 32d-10 6  Loose Joint dis 42d-10 7  Parliament & Mayer's Hinges dis 32d-10 8  Loose Pin, no Acorn dis 424-610 8  "Acorns dis 424-610 8  "Japanned dis 50d-10 8  "International dis 50d-10 8  "Union Mfg. Co. s Fancy Butts.— Figured Enameted Loose Joint dis 55d-10 8  Nickel Plated dis 534-60 8  Boston Finish, Plain dis 75d-5 8  "With Iron Acorns dis 75d-5 8  "With Iron Acorns dis 75d-5 8  "With Sl'd dis 75d-5 8  "Weought Irow dis 75d-5 8  Fast Joint, Narrow dis 30es5	Enameled and Tinned Ware. dis 36 @ 45 %	Serew Hook and Eye	Button's Patent
Durrestic	Fast Joint, Broad, Japanned,dis 30&10 \$ Loose Joint,	Sauce Pans	Hoes	Gas Pilersdis 25 \$
Turn Table Lightning Rudson's \$7.75 \( \pi \) doz	Parliament & Mayer's Hinges	Tinned Saucepans	Riveted Eye	Euresa Friers and Nippers. dis 25 %  Plumbe and Levels  Stanley R. & L. Co.'s Pat. Adjustable. dis 60&:10 %  Chapir's dis 60&:10 %  Chapir's dis 60&:10 %  Standard Rule Co.'s New Adjustable. dis 60&:10 %  Standard Rule Co.'s New Adjustable. dis 60&:10 %  Standard Rule Co.'s Non-adjustable. dis 60&:10 %  Pocket Levels. dis 60&:10 %  dis 60&:10 %
	Loose Pin, no Acorndis 42% \$10 \$	Brase Thread	Grub dia 25 s Planters dis 16 g 26 s Scovill Pattern dis 10 s Lane s C. E. Cresent, American Pattern dis 15 s Scovill Pattern dis 15 s	Chapin's. Non-Adjustable dis 60&10 \$
Union Skeleton Paring, Coring and Slicing\$3 00 \$\psi\$ doz net Bay State, Paring, Coring and Slicing\$13 50 \$\psi\$ doz. net C_max Slicer800	" Japanned	Faucets. dis 25 %	Lane s C. S. Cresent, American Patterndis 5 %	Standard Rule Co,'s New Adjustabledis 60411 % Standard Rule Co,'s Non-Adjustable dis 50410 %
Comas Slicer800	Union Mfg. Co.'s Fancy Butts.— Figured Enameied Loose Jointdis 55&10 \$	Francets   dis 50 %   Fenn's   dis 50 %   Fenn's   dis 40 %   Star   dis 50 %   dis 40 %   Star   dis 50 % 10 %   Frary's Patent Petroleum   dis 15 % 10 %   dis 10	Hooks. Scovil Patternnet	Seaturate   Note   Co.   Note   Adjustable
C. max Silcer.  Ash Sifter.  J. E. Corning's Barrel Head.  Gis 10  Gis	Nickel Plated "dis 83%&10 % Boston Finish, Plain	Stardis 55&10 % Frary's Patent Petroleum dis 15&10 %	Bird Cage	Davis' Patent
Squareper doz \$3.50 dis 30 s	" with Iron Acorns	Wood and Metallic	Bench—Hotchkiss' \$5 00 \$ doz	Judd's Axie
Conn. Valley Mfg. Co	Fast Joint, Narrowdia 30&5	Enterprise Mfg. Co., Self-Measuringdis 20 %	" Weston's No. 1, \$8.00; No. 2, \$7.00 per doz net	Judd's Axie
Douglass	Lt. Narrowdia 25ds5	Files, American File Co. 24 00 to Commence with 90 of	Skinner'sper doz \$6.25, dis 20 \$ Clothes Line. Hart's list dis 6.210 \$55:10 \$	Space
Beecher(French,Swift&Co) Griswold	Loose Joint, Broad	Arcade File Works \$5.00 to £ currency	" " Bargent's listdis 60&10&10 \$	" Clothes Line
Griswold	Inside Bund, Regular	Nichoisonnew list, Jan. 1, 1875, net	Ceiling. Hart's listdis 60&10&10 s	Pumpa. Douglas Cistern, etc. new list dis 25 s
Damond Hardware Co	Loose Pin Wrt	Heller & Bros \$5 00 to £ currency	Coat and Hat Hart's lies dis 60% 10% 10%	S. & F. Lew list dis 25 % Union Mfg. Co's. Cistern and Pitcher. new list dis 20 % Lew list dis 20 % Le
Nobles Mfg. Co.   clis 40 kH s	Loose Pm Wr.   dis 33c5   Am. Spiral Spring Butt Co. list May lat.   dis 25 5   Union Spring Hinge Co.   dis 25 5   Union Spring Hinge Co.   dis 25 5   Blind Butts, Parker   dis 65c:10 5	Enterprise Mfg. Co., Self-Messuring. # \$ 15c; dis 28d 10 \$ Felles Pinnes. # \$ 15c; dis 28d 10 \$ Fales.  American File Co. \$ 5 00 to £ currency—dis 20 3 Arcade File Works. \$ 500 to £ currency Auburn File Works. \$ 500 to £ currency Nicholson	Cotton   dis 545     Beit.	State Cos. Clarers and Pricaer. dis 25 % State Cos. Clarers and Pricaer. dis 20 % Garden Engines. dis 10 %
Andrews' Blis	Paimer	Rothery's \$5 00 to £ currency	Wrought Staples and Hooks and Staplesdis 754	Punches.
Andrews 511a Criwed's Patent Bits.	Sheparddis 65&10 \$	Horse Rasps 5 00 to £ gold	Gras. dis 2) \$	Principes.  Pett or Drive
Blake's & b-dis 40 x	" Nicholson dis 45&10 \$	Butcher's 4 50 to £ gold	Grass	" Leach's Patentdis 15 %
Hollow Appears Douglass!	Garretson, No. 1dis 5056210 %	Walter Spencer & Co.'s "Diamond" 4 50 to £ gold Spear & Jackson s 5 00 to £ gold	Horse Nails.	Rail
Hollow Augers, Douglass'	Sacpard   List Scale	W. K. & C. Peace's "Imperial"	Ausable Nos. 5 8 7 8 9 10  Nos. 5 8 7 8 9 10  "P't'd Po'td. 1 81c 28c 27c 25c 24c 25c 24c  "Buffald Street 1 81c 28c 28c 28c 28c 28c 28c  Buffald Street 1 81c 28c 38c 28c 28c 28c 28c  Buffald Street 1 81c 28c 38c 28c 28c 28c 28c  Buffald Street 1 81c 28c 38c 28c 28c 28c 28c  Buffald Street 1 81c 28c 38c 28c 28c 28c 28c  Buffald Street 1 81c 28c 38c 28c 28c 28c 28c  Buffald Street 1 81c 28c 28c 28c 28c 28c 28c  Buffald Street 1 81c 28c 28c 28c 28c 28c 28c  Buffald Street 1 81c 28c 28c 28c 28c 28c 28c  Buffald Street 1 81c 28c 28c 28c 28c 28c 28c  Buffald Street 1 81c 28c 28c 28c 28c 28c 28c  Buffald Street 1 81c 28c 28c 28c 28c 28c  Buffald Street 1 81c 28c 28c 28c 28c 28c  Buffald Street 1 81c  Bu	Rais
Bouney's Adjust. P doz 348-dis 25&10 5	" Nos, 2 4. 4½, 6, 8, 10dis 45 \$	Turton Bros. & Matthews	" & Blued., " Sie 28c 26c 25c 24c 28c	for N. E. Hangers
Ives Expansiveeach \$4:50—dis 40 %	Messenger's Cometper doz \$360 dis 30 \$	Moss & Gamble	" & Blued. " 316 28c 38c 25c 24c 28c	Rakes.
	Lyman'sper doz 2.75 dis 30 s	"Phile Sheffeld " P. T. Co. 5 00 to £ gold	Globe, P't'd & Pol'd " 31c 28c 36e 25c 34c 25c National, Pointed and	\$8 00 9 00 10 00 11 00
Oeuble Cut Gimlet Bits, Shepardson's	No. 5, Iron Handieper doz 2.25 dis 40 %	Limet & Co. (French)	Polished, Pat. Fin " 29c 25c 38c 22c 31c 30c National, Pointed and	Malleabledis 40 %
" Hartwell's		Mrs. Coles	National, Fointed and   Polimed, Pat. Fin.   29c 25c 28c 22c 31c 30c   National, Pointed and   Polimed, Rx. Fin.   30c 27c 35c 24c 25s 22c   Perkins Prid—Black.   30c 27c 35c 24c 25s 25c 35c 26c 31c 30c   Perkins Pointed and   20c 25c 36c 26c 27c 30c   Perkins Pointed and   20c 25c 36c 26c 27c 37c 37c 37c 37c 37c 37c 37c 37c 37c 3	Cast Steel
Morse's Bit Stock Drills, List of Jan'y 1, '76dis 25 5	Eureka	Fluting Machines. 5 in., \$6.00; 7 in., \$7.00, dis 25 s. Mrs. Coles. Pony. 4 in., \$4.75; 5 in. \$5.6 in. 5.50; 7 in. \$6 dis 25 s. Knox, 4 inch Rolis. \$4.75; 5 in. \$5.6 in. 5.50; 7 in. \$6 dis 25 s.	Polished and " soc 26c 24c 25c 22c 21c	Evan'sdia 40 «
U. Hommedieu's Ship Augers	Caps-Percussion, per 1000.	4 00 each net   2   2   2   2   2   2   2   2   2	Perkins' Pointed and Blued " 30e 26e 24c 23c 24c 21c	Hunt's
Hommedieu's Snip Augers	('npaPercusation, per two. 37 @ 40c G. D. Ely's E. B. 1-4a, 58c, 1-10s, 51°50; 70c, gold Donble Waterproof, 1-4s, \$1°50; 1-10s, \$1°50c, gold Colt's	Peerless 4-Inch Rolls	Perkins   Pointed and	Real war Straps
Awis, Brad Sets, &c.	Colt's	44 44 44 6 44 \$ 75 each net	Star Brand, 16c.; Morgan	Rivers.
Awis, Sewing, Common. per gross \$1:20-dis 15 g.  Beat. per gross \$1:60-net  Shouldered Peg. per gross \$2:25-dis 15 g.  Shouldered Peg. per gross \$2:25-dis 15 g.	Carpet Sweeperseach \$2 75 net	Champion, finch rolls 6 00 each net	Perkins' and Vulcan	Rivers
PRICE PER	Welcomeeach 2 75 net	Eureka, No. 1, Zanah Roll 4 00 each net	Perkins', Vulcan and Globe 500 ibs dis 5 s	Double   Coper Rivets and Burrs
Brad Sets, Aiken's	U 100	No. 2.5-inch Roll	Burden * keg. \$4.624	Per lb. 49c 50c 53c 54c 56c 58c 60c 65c 70c
Shouldered Brad. Der gross 23-das is 05 Brad Ses, Alken 3  No. 42, \$10'20; No. 43, \$12'50 dis 45-cit of 5  Clark's. dis 05  Staticy's Excelsion. \$13'50-dis 30-kit 05  Staticy's Excelsion.	Wool	K. F. M., 41-inch Roll	" B. I. Pattern W keg. 5'125	Pond and a distance d
Stanley's Excelsion	Cotton	4 inch rolls. 5 00 each net Eureks, No. 1, i-inch Roll 6 75 each net No. 2, 5-inch Roll 5 00 each net Defiance. 4 in., \$5.00; \$in., \$4.00; \$in., \$6.50 each net a. inch Roll 3 50 each net Orown. 45 in. Roll, \$3.75; \$in., 400; \$in., 500 each net Orown. 45 in. Roll, \$3.75; \$in., 400; \$in., 500 each net Demestic Finter. \$1.50 each net Getsevs Hand Fluter. \$15 00 per doz net Finting Sciencers. 55 \$346 \$35 \$4.	Mule Shoes.   Perg. 5-62% rerkins Snow	D. Uy's Revolvingdis 25 %
Axes.  \$1004's	Cast Iron, Steel Pointsper doz \$2.00 dis 4585 \$	Domestic Fluter. \$15 00 per doz net Geneva Hand Fluter. \$15 00 per doz net Fluting Scissors. dis \$8% @ 35 %	Boston Rolling Mills Hand Made	Stair
Collins'	Clasters dis 30&10 @ 40 % Sed. dis 30&10 @ 40 % Plate and Shallow Socket. dis 45 & 50 % Sed. 40 & 60 % Sed. 40 % Sed	Forges.	American fee Chiselper doz \$6.50 net	Reflers.
d. Clark's (J. C. W. & Co.) bron'd or red. dox \$10 00 net fluid's Razor Blade	Deep Socket	Forges. Empire" (W. P. Kellogg & Co.)	Novelty Ice Breakers	Barn Door revised list dis 60, 10&10 % Novelty
MULTIN THE CO. 19 AN	the 604-10 d	Hay, Manure & Spading	Duniap s Ring Picksper doz \$200, det	Manufacturers' List of May 19, 1976.
Mann '8 ⊕ doz 12 50 ⊕ 12 50 Mann '8 ⊕ doz 12 50 ⊕ 14 '9)	Sargent's	Plated A 1	iron " per dox \$1.85, dis 60&10 \$	Manufacturers' List of May 19, 1976.
Mann	Chase Enguas Coll	Reed & Barton	Pick in Handle per doz \$1.75 net	Manila Tar'd Rope
John Leverett's	Trace, 634-10-2 by the cask, \$\pair\$, gold 50 \$\pair\$			
M. H. Jones & Co doz 31 50 2 13 00 net	German Halter Chaindis 25 % gold	Gauges. dis 45&10 x	Brass	Sisal
Elephantper doz \$9 50 @ 10 50 net	Galvanized Pump Chain 10% @ 11c.	Gauges dis 45-10 5 Marking dis 45-10 5 Marking dis 25 5 Mirc dis 25 5 Mirc dis 25 5 Mirc dis 20 Mirc dis 20 5 Mirc dis 20 Mirc dis	Knives. Ames' Butcher Knives	Rules Boxwood Ivory
Axies. Common (Guy C. Hotchkies, Field & Co.)	Jack Chain, Iron	Gimlers.	" Shoe " " W dox \$1.50—dix 15 % " Bread " W dox \$1.50—dix 15 % Hav ang Straw, " Wadsworth's" dix 25 % Table and Pocket See Cutlery	Chapin's
A xle Grense.—Frazer's W b 6c.	Chalk	"Bee "Gimietsper gross, \$1±00, dis 40 % Double Cut. Shepardson's dis 20 %	Table and Pocket	Stanley
Light or "Common"dis 25&10 \$	Blue	" 'Hartwell'sdis 40 %	Carriage (Jap'd 80 cents per gross)	Willis Thrali & Sondis 80&10 5 dis 50&10 5
Bands, - nated new list dis 50&5 3	Chisels.	Gimles & Combines & Co	" Plush Tipdis 10 %	Willia Thrail & Son.   dis 00&10 \( 2 \) dis 50\( 8 \) 10 \( 8 \)   Sad   Irons.   From 4 to 10 lbs.   F \( 2 \) 50   6 \)   \$\)   \$\) \$\) \$\) \$\) \$\) \$\) \$\) \$\) \$\) \$\)
B. ass (Plated list)new list dis 50, 10&5 \$	Crossmandis 50&15&10 \$	Tinned and Enameled	Door, Mineral	Self-Heatingper doz \$938 @ 950 net
A XI Grense. Trace display the first state of the f	White Crayons	" Douglass' dis 25:10 % Glue Pets.  Tianed and Knameled dis 30 @ 35 % Family, How's "Eureka" dis 25 % Family, How's "Eureka" dis 25 % " L. F. & C. s "Handy" dis 25 % Grins Steme Fixtures dis 65:10 % Reading Hardware Co. dis 70:10 % Reading Hardware Co. dis 65:60 % Rick Bros.	Flash Tip.   dis 10 \$   Flash Eight   Graph   Graph   Graph   Graph	Sand Paper.  Beader & Adamson's Finst, 00 to 14, 34 25 \$\pi\$ ream 2, 3/4 & 3. 4 25 \$\pi\$ ream 35 25 \$\pi\$ Star
Belis.	Firmers, Douglass, Extradis 50&10 %	Sargent's Patent dis 65&10 % Reading Hardware Co	Furniture, Plain	44 4 27 48 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
H u.d. Light Brass	Buck Broshew list dis 15 @ 17% & Hart Mfg. Codis 60&5 %	Hart Mig. Co.'s	Andles	Star. Fresm \$2 25 15 2
Sliver Chimedis 30 % 10 %	Socket Cornerdis 60&10 \$			New England, same list as B. & A. Fiintdis 15 & H. B. & M. Roman Flint
Globe (Conie's Patent)	Tanged Firthers	Humason & Beckley Mfg. Codis 16 % 10 %	Tubular	Common 9 b 16 @ 18c. net
" Yankeedis 35&10 %	" Newhould's	Henry Hammonds' (Maydole's List)dis 12 %	Brady's Patentdis 10&10 \$	Patent. W h 24c. net Silver Lake, Russia Flax. W h 56c)
Crank, Taylor'sdis 25&10 %	Clamps.	Verreedis 5 %	Yankoedis 10 & 10 %	Fatent. W B 16 G 18C. net Sliver Lake, Russia Flax. W B 26C, net Sliver Lake, Russia Flax. W B 50C ) White Cotton W B 50C ) Raw Hide. Drab Cotton W B 60C )
Cone'sdis 10 %	Iron, Providence Tool Co.'s, Wrt. Iron	Magnetic Tackdis 20 %	Police, Smailper doz \$7.50 net	Bash Locks.
Crank Taylor's	Iron, Providence Tool Co. 8, Wrt. 1708.	Humason & Beckley Mfg. Co.   dis 184,810 S	" Monroe's Patent. per doz \$4'0 dis 20 5 Lanterns. No. 0, \$11'00; No. 1, \$14'00 net Peerless. No. 5, per doz \$11'0-dis 10&10 6 Brady's Patent. No. 5, per doz \$11'0-dis 10&10 6 Brady's Patent. dis 10&10 8 Etns. dis 10 & 10 5 Yankee. dis 10 & 10 6 Pollee, Small per doz \$7'50 net Lard Pressess. Draw Cut, 14 inch. each \$65 00—dis 20 5 Lemen Squeezzers. Porcelain Lined. per doz \$7 00, dis 15 5 Eureka, Tinned. per doz \$0 00 net Ling's Improved. per doz \$6'00 net	ensis Lecks. Clark's, Nos. 1 and 2, \$10.00 per gross
Hart, Bliven & Mead Mfg. Codis 50&10 %	" Cabinet, Sargent'sdis 60&10 %	" Leg Irons 86 50 per pair dis 25 g	Porcelain Lined	Ferguson's   dis 450
Pull,	Cilips, Axio	Leg Irons 25	Dunlap's Improvedper dox 36'00 net	Hammond's Window Springsdis 20 %
Calldia 18 %	Superior	Handles.	Duniap's improved.   per dox go'on het	Sausage Stuffers or Fillers.
Oby Common Wrought. dis 20&10 % Western. dis 20&10 %  ** Sargent's. dis 50&10 %  ** Sargent's. dis 50&10 %	Cocks.	Door or Thumb Latches	Sil. Lake ChalkNos. 0, 1, 2, 5, 86, 650, 7, 7:50, dis 20 %	Stow or Perry # doz No. 1, \$15; No. 0, \$21—dia 25 \$
** Sargent's	Cocks  Srass Racking	Brouzed Iron Drop Latches,per dos \$1.00 @ 1.25 uet	Locks and Latches.	Baw Frames
Dodge's Genuine Kentucky, new list-	Ale and Beerdis 5610 \$	Surface Chest	Eagle	Baws.
\$12'00 10'00 2'00 8'00 6'00 5'00 8'50 2'50 6'00 dia 50 \$	Board and Boxdis 15 @ 20 %	Liftingdis 60&10 5	Langstroth & Crane, Round Key	Disston's Circulardis 35 \$
	Increase Wilson'sdis 20 %	Saw and Plane	Barnes & Deitz, Flat Keydis 25 \$	Cross Cut
Bellows Common List of Sont 15 dis 404	Brighton dis 20 %  Increase Wilson's dis 20 %  Selsor's Pat. dis 20 %  Selsor's Pat. dis 20 %  American (Enterprise Mfg. Co.) dis 20 %  French Steel dis 20 %  French Steel dis 20 %	N. Carolina Handle Co	Sargent & Greenleaf, Flat Key	H. W. Peace's Circularsdis 25 %
Bellows. Biackaniths', Common List of Sept. 15	The Swiftdis 20 s	Hickory Firmer Chisel, ass'td 5 25—dis 20&10 %	Shepardson'sdia 20 s	Cross Cut, Wood, Hand, &cdis 20 %
Hind Adjusters.—Domestic doz \$3—dis 20 \$	Bemis & Call Co. s	Apple 4 ass'td 6 50-dis 20&10 \$  Apple 4 ass'td 6 00-dis 20&10 \$  1 arge 7 50-dis 20&10 \$	Cabinet—Gavlord	One-Man, all lengthsdis 40-210 \$
Blind Fasteners. dis 30 s	Excessior	Socket " " asa'td " \$ 50-dis 204:10 %	Branford.	Billet Websper doz 5:00
Moulders   dis 25	Miller's Patentdis 25&10 g	File. Framing " " 7.00—dis 20±10 \$ File. " " 4.00—dis 20±10 \$ Auger. " 650—dis 20±10 \$	Norwich	Wheeler & Clemson Mfg. Co.'s Handdis 4045 \$
Blind Staples.	American (case)	Fig	Mashus	Wheeler & Clemen Mrg. Co.'s Hand
Biling Staples. Sin. and larger. \$50 57 c	Corkscrewsdis 25 g	Douglass' per set \$1 .55—dis 10 %	P. Jr. Corbin	Nos. 101 102 108 104 105 108
Agreemial Pulley Blocksdis 3 5	Bradley sdis 10 g	Hangers.	Jacobas & Nimick Mfg. Co	Saw Sets.
**leck*. dis 25 tacke, Kope and Iron Strapped, Providence Tool Co.'s 18st. dis 2018 5 tarke, Kope and Look Strapped, Providence Tool Co.'s 18st. dis 2018 5 tarke, dis 2018 5 tarkey Rule and Level Co. dis 25410 5 tarkey Rule and Level Co.	Cast Steel Crucibles.—Gautler & Co	"Anti-Friction" No.1, \$1.25; No. 2, \$1.50 # prdis 40 \$	Mallory, Wheeler & Co dis 40&5 \$	Common Lever
Stanley Rule and Level Codis 254:10 \$	Crucibles,—Gautier & Co No. 5%c	Challenge dis 40 %	" American Lock Mfg. Co ais 834 5	Leach's
Biewerm. Reystone Portable Forge Codis 20 s	Curling Froms. &c.c. dis 10 5	Harness Snaps.	" Vulcan Hardware Codis 20 \$	Hammer, Hotchkiss
Cast Iron Sarrel, Shutter, &cdis 60&10 \$	Pinching Irons	Novelty	Norwalk	Per doz \$150 1000 1200 900 800 610 dis 10 \$  \$aw \$505. \$iliman's Genuine
Wrought Iron Barrel	Curry Comb Mfg. Co	Hotchkiss'dis 10 % Andrews'dis 25 %	Miller's Patent	Haten, Counter
Wrought Iron Flush, Stanley'sdis 60&10 g	Rubber	New York Wiredis 30&10 %	Mallets,—Hickory and Lignumvitedis 20 3 Mear Cutters	Union Platform
Carriage and Tire, Common	Pinching Irons. \$\\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$	ALESCHOLDS - LEGISLE DIOUC	Diron's (P. S. & W.).Nos. 1  # dos. \$14 00 \$17 00 \$19 00 \$30 00 dia 25 5	Imitation   \$700 dis 25&10 \$   Beales   Baten, Counter   \$9 doz 256 dis 25 \$   "Cea   \$9 doz 256 dis 25 \$   "Cea   \$9 doz 256 dis 25 \$   Union Platform   \$600, \$700 dis 25 \$   Union Platform   \$600, \$700 dis 25 \$   Brown's   dis 20 \$   Brown's   dis 20 \$   Fairbanks'   new list dis 16 \$20 \$   Chatillon's Grocers'   dis 25 \$   Chatillon's Grocers'   dis 25 \$   "Eureka   dis 30 \$   Sould Beama   dis 36 \$   Sould Beama
** Norway Iron	American Table   Meriden   New list Jan. 75, dis 25 s	Lathing, " 123	Miles Challenge	Howe's the 1545 c
" " Philadelphia	Am. Pocket—Humason & Beckley Mfg. Codis 20&10 s	Shingling, Nos. 128	Perry's (P. S. & W.)Nos. 200 900 400 400 — dia 25 5	Chatilion's Grocers'
Union Nut Company, old list	Am. Milier Bro.'s Cutlery Codis 25 % Naugatuck Cutlery Codis 25 %	Lathing, "128# doz 775 850 925	Woodruff's (F. S. & W.)Nos. 100 150 W doz. \$15.00 \$18.00—419.25 \$	Universal Family
* H. B. & W	Britanniaper doz 7:50—dis 30 %; by bbl. dis 38% %	Shingting, Nos. 123	W dos. \$27.00 \$18.00 \$42.00—dis 35.62 \$	No. 2 " " " " " " " " dia
Reystone Portable Forge Co.   dis 20 s   He 518 s	Nangatuce Cuttery Co.  Dippers. per doz 7:50—dis 30 %; by bbl. dis 38½ % Britannia. per doz 83:35—dis 30 %  Rimmed. per doz 87:5—dis 20 %  Dog Collars.	Lathing, "128", 9 dos 7 50 8 29 9 00 Hurd's 6830 8 1 8 1 9 00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Each \$56'00 \$90'00 \$250'00—dis 20 \$	Farrianks
Bott Engs.  Borna Machines.  Upright. Angular.  Hover's, no Augers.  Sylls Srow net  with Augers.  bouglasse no Augers.  5'50 7'80 dis 6'8  Longlasse no Augers.  9'40 11:00 dis 6'8  Parr's, no Augers.  5'50 7'50 dis 9'8	Dog Collars - dis 20 5	Shingling, Nos. 123	No	Defiance Box and Shipper dos 6'00, dis 10 %
Hovey's, no Augers	Leather dis 30 % Brass dis 25 %	Lathing. 128	Molasses Gates.	Footdis 60 & 10 % Ship (common)per doz 88 00 net
with Augers 9:00 11:00 dis 40 \$	Pod Towns to W dos 1200 net	Yerkes & Plumb	Tinned ends dis 404 10 \$	Perew Drivers
	" Gray's 9 doz \$2'50 net " Johnson's 9 doz \$3'00 net Cott Springs, Gem Nos. 1 2 8	Claw, 123	Lincoin'sdia'50&10 \$ ]	Douglans Mfg. Co
Sweets 400 net	Per dozen	Shingling, Nos. 0 1 2 3 W doz \$7 50 8 00 8 50 9 00	Mortars and Pestles-	Disaton's
Snell's. 4:5 6:25 dis 25 :	Japannedper doz \$200 250 350	Lathing, " 128 doz 800 850 900	Nail Puliors.	Staniely Rule & Level Co., No. 1
Sellogy's, no Augers. 973 4W net Swests. 975 4W net Swests. 975 6W net Snek's. 175 675 dis 85 Philips', with Augers. 175 675 dis 85 Mortung Machines, \$30 W each 418 30 \$	Cott Springs, Gem. Nos. 1 2 5 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7	Stumon	Weed's dis 15 5  Meriars and Pesties  roa net 1  Nail Pullers  Tat's per doz \$24'00 net  Nails see Trade Report  Natis and Washers  quere and Hex., New List March 1, 76	Plat Head Iron, list Sept. 1, 1875, R.&E. Mfg. Co.dia 234 g
#Bow Fins. 6 kion Nut Co	Philadelphia	Elephant. 78. 4 dez 80 00 2 de 30 5 5 5 5 5 5 6 6 7 6 7 6 7 6 7 6 7 6 7 6	Square and Hex., New List March I, 76 7c off list	Roung Head from " Am. 5c. Codis to s
\$ 1:00 Nut Co	DIRWING KINIVOS	Shingling, Nos. 128	Wilers   Line   Brass and Copper   dis 44 @ 45 \$       Hiller's Zinc   Brass and Copper   dis 44 @ 45 \$       Hiller's Zinc   Brass and Copper   dis 44 @ 45 \$       Dimssed's   dis 26210 \$       Hiller's Zinc   Brass and Copper   dis 44 @ 45 \$     Dimssed's   dis 26210 \$       Hiller's Zinc   Brass and Copper   dis 40 @ 45 \$     Hiller's Zinc   dis 26210 \$       Hiller's Zinc   dis 26210 \$       Hiller's Zinc	Flat Head Brass
MFRCUSO die 4045 a	Douglass, Extra	Lathing, "123, \$\psi\$ doz 8 00 8 50 9 00 8 \( \) P. Verree & Co. \$\psi\$ so \$\psi\$ 0 7 50 8 60 \( \) Eshingling, Nos. 12 3, \$\psi\$ doz \$\psi\$ 0 7 50 8 60 \( \) Claw, "12 3, \$\psi\$ doz \$\psi\$ 50 8 50 3 \( \) Lathing, "12 3, \$\psi\$ doz 7 00 7 50 8 00 \( \) Uncerhill's (dis 10 5)	Dimsted's	ag or Common Coach, New List March 1, 78dis 40 \$
Sarber's l'atent	Merriii. dis 60&10 \$	Claw, " 123	Malleable	led. List of Plain Jarons of Jane
Spofford's Patent	Bradley's. dis 25 \$	Objection Was 104 W 4 0 W 600 0 FO	Ox Shoes.  Ox Balls	apanned, List of Plain Screws of Sept. 1, 1875d s 15 4 decause—Fist Head, Iron, List Jan. 12, 1875dia 25 5
Noble's Fatent. dis 40&5 g	Nobles Mfg. CO.   18 15     Bradley   18 25     Adjustable                     Drilla and Drill Stocks.             Blacksmiths                   Blacksmiths                   Breast                   Breast                     Breast                       Bresst                       Bresst                       Bresst                       Bresst                       Gis 10                     Gis 10                       Gis 10                       Gis 10                       Gis 10                       Gis 10                       Gis 10                       Gis 10                       Gis 10                       Gis 10                       Gis 10                       Gis 10                         Gis 10                         Gis 10                           Gis 10                             Gis 10                                   Gis 10                                     Gis 10	Uncerhil's \$ doz 7 00 130 do 10 10 10 10 10 10 10 10 10 10 10 10 10	Ox Balls, dis 60&10 5	Fiat Head Iron, list Sept. 1.1875, R.&K. Mfg. Co.dit 634 g  Round Read Iron  Am. Sc. Co. dis 60 g  Round Read Iron  Am. Sc. Co. dis 60 g  Round Read Iron  Am. Sc. Co. dis 60 g  Round Read Iron  Round Head Brass  Sound Head Brass  Round Head Iron, List March 1, 78. dis 60 g  Round Parkent Gimier Foint, List Jan. 1, 1875. dis 50 g  Round Head, Iron, List Jan. 12, 1875. dis 50 g  Round Head, Iron, List Jan. 12, 1875. dis 50 g  Round Head, Iron, March 1, 1875. dis 50 g  Round Head, Iron, March 1, 1875. dis 50 g  Round Head, Iron, March 1, 1875. dis 50 g  Round Head, Iron, March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head, Iron March 1, 1875. dis 50 g  Round Head 1, 1875. dis
Noble's Fatent	Breast P. S. & W	M. H. Jones & Co	Faber's Carpenters'net E	Inglish, Flat Head, Iron : Am. Listdis 40&5 @ 5. &10 g
Sturi Kings.—Union Nut Co	Bresst, Aiken's	Half Hatchets, Nos. 123 # doz 8 00 8 50 9 00 I	Dixon's Lead	Birmingnam Screw Co. Brass   dia 60&7   \$   \$   \$   \$   \$   \$   \$   \$   \$
Hotchkies	Wilson's dis 10% Miller's Falls dis 25 s	Broad, " 234	Picture Natis and Knobs.	-Wood, Beach
Butchers' Cleavers.	Retchet, Merrili's dis 20 3 "Ingersoll's (old list) dis 25 5 "Whichey's dis 20 5	Em-ire Hatchets, M. H. Jones & Co. 18 00 19 50 1	Porceisin Headdis 55&10 \$ Hichards Patent	tand
Bratty's dis 20 5	Ratchet, Weston's dis 20 \$ Ratchet, Weston's Action dis 20 \$ 25 Moore's Triple Action dis 20 \$ 25 \$	Lathing. "123" # doz 13 0 11 00 18 00 M. H. Jones & Co.  Shingilag, Nos. 12 3. # doz 86 00 5 00 9 00 1 Maif Hatchets, Nos. 12 3. # doz 8 00 8 50 9 00 1 Claw, Nos. 12 3. # doz 9 00 9 90 10 00 I Claw, Nos. 12 3. # doz 9 00 9 90 10 00 Lathing, 12 3. # doz 10 11 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18 00 18	Pinking from per dor 2 % dis \$54:10 c	14 Humason. Beckiev & Co.'s
819'00 831'00 824'00 837'00 880'00 863'50 830'50 840'00	Moore's Triple Actiondis 30 @ 25 \$\ \text{Mison's Drill Stocksdis 10 \$\ \text{Automatic Boring Toolseach \$2^78—dis 20 \$\text{S}\$	All pol. Sh'gling " 133 doz 4 35 5 60 8 25	Pinnes and Plane Irons.	Scythes Sood's German Steel, GrassP doz 410 s0)
Sendley	Autometic Boring Tools each EP75-dis 30 %	All pol. Sh'gling "123 v doz 525 500 575 Solid Steel Lath "128 v doz 725 750 775 8  Hay Knives "Lightning "	second Qualitydis 5) 3 Balley's Patent Adjustable, new listdis 25&10 5	lood's German Steel, Grass
EDULLANO ALIA GLI GI	Morse's Beach Patent	Wadsworth's	Oncore 9 b 18c net  Ox Balls dis soatus p Pencils dis soatus p Pencils dis soatus p Pencils dis soatus p Proper Carpenters' dis soatus p Lumber dis soatus p Picture Natis and Russus dis soatus p Processin Read dis soat	German Grain doz 14 00 from list Cr
Cast Brassdis 20 4	Monroe's 8 to 10 to	Gate, Western	Bailey's Patent	Young America
Fast soint, Narrow	Egg Benters. Stn. 10 in. dis 10 g  Monroe's. Per dox \$8'00 9'00 dis 50 g  Dover. Per dox \$8'00 9'00 dis 50 dis 40 g  National \$0 dox \$6'00 dis 30 g	Rolled Plate. dis 65&10 %	Greenfield Tool Co	Silver Clipper   12 (0)   10   11   12   13   15   15   15   15   15   15   15
Broad ais 40610 5	National 9 doz 84 10 dis 80 s	Wrought Strap and Tdis 60 s	Middletown Tool Co	cythe Snaths dis 20 s la
The second second second second				

dis 15 %

B1 50 om Hat

\$1-50 m list. its 50 \$ tis 50 \$ tis 50 \$

Shears and Scissors dis 70&10 \$ Cast Steet	METALS.	4 Per cent. %	Rose Pink   19c   Gum, Copal   %c   %c   %c   %c   %c   %c   %c   %
Seymour's Straight Trimmers   dis 60&10 & Scissors   dis 50 & Als 50 & Pruning   per dox \$10 00—dis 40 & Barnard's Lamp Trimmers   per dox \$3.75	IDAN Down Barn I to IV control to Sheet Band	9 44 1710	Raw H Raw H 15 G 200 Litnarge
Bhenves.   Shenves.   Shenves.   Shenves.   Shenves.   Shiding Door, M. W. & Co. list.	Hoop and Scroll, 1% to 1% cents per ib. Provided, that none of the above Iron shall pay a less rate of duty than 35 per cent. Pig. \$7 per ton: Polished Sheets. 3	16 Per cent. 1-45 18 1-55	in oil
B. & E. Hst	Hop and Scroll, 1% to 1% cents per 1b. sneet, band, Hop and Scroll, 1% to 1% cents per 1b. Provided, that none of the above Iron shall pay a less rate of duty than 35 per cent. Pig. 87 per ton; Pollahed Sheets, 3 cents per 1b.; Wrought Scrap, 48 per ton: Cast Scrap, 36 per ton. Railroad, 70 cents per 100 lbs. Boiler and Plate. 1% cents per 1b.	MISCELLANEOUS.  Common Plain Brass Pail Ears. 89	Vermillion, Chinese. 1 55. gold Rotton Stone, soft, English 5c
Sargent's Listdis 55&10 \$	Pig Iron—AMERICAN. Foundry No. 1	Hose Pipes, 500 and over	Miles, Paris, English, prime. 175c. gold Trieste. 23c. White, Paris, English, prime. 105c. white, Paris, English, prime. 105c. 105c. Yellow Cohes, Fence. 1n bbls. 25 @ 35c. Prices current per box of 50 Feet.
Shovels and Spades.  Ames Birmingham Shovel Co	Contract BOOTCH.	High Brass Scrap. 16 cents.	the state of the s
Ale 25   Ale 25	Gartsherrie	Low "18 cents. Gilding, 20 cents. Turnings, Filings and Chips, half the price of Scrap. Orders for Goods on this list received on or after this	Nellow Chrome   186   16   16   16   17   16   17   18   17   18   18   18   18   18
Duning s Shovels and Scoopsdis 2087% S Shovels and Tongs.	Bar aron. Am. Benned, at mill	date, will be filled at the rate herein stated, Terms—Net cash. No discount allowed. Interest to be added after thirty days.	1, in oil. 11c 18 x 22 to 20 x 30. 10-75 9-75 9-75 9-75 7-75
Shove   s and Tongs.   Iron and Brass Head, n. & E. list.	American, at works, currency	ANTIMONY16c. gold	1 Linseed Raw. P gral, casks. 58c, bb) 59c 28 x 28 to 24 x 78. 18 co 11 co 12 co 14 co 18
Slates. Square Frames, Round Cornered, by casedis 65&10 Less than a case	Wrought Scrap, from yard " 28 00  Bar 1ren from Store,	LEAD-DUTY: Fig \$2 per 100 lbs.; old Lead, 1% cent per 10 .: Pipe and Sheet, 2% cents per 1b.	Whale, Crude
Spokes. North Carolina Handie Codis 20 % Spoke Shaves.	Common iron.  4 to 2 in. round and square  to 6 in. x % to 1 in  3 22c	Spanish	Sperial, Crude
Defiance Metallie	Refined from   % to 2 in round and square	American	4 Seal, Extra Refined.
Snoke Trimmers.	1 to 6 in, x 1/4 and 5-16, and 1 to 6 in, x 1/4 to 2. % \$ 2.76 Rods—% and 11-16 round and square	Sheet. dis 10 f. 10c. Shut dis 10 f. Drop. 9%c. Buck, 10%c.	80uthern Yellow
Bonney, s	weddsh fron.	N. P. U	6 Sundries 36 x 46 to 30 x 50
Spoons. Tinned Irondis 10 %	Sheet fron. Common R. G. R G.	SOLDER	C Benzine# gal. 16e 30 x 56 to 34 x 56. 27.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:00 21.75 25:
By the case. dis 30%  Basting. dis 10%  Britannis. dis 50% dis 50%  Boardman's, new list. dis 55%	American and English, American, English, Nos. 10 to 20	STEER POTT Date, togots, oneets and Cons, valued at 7 cents perils, or under, 3% cents; over 7 cents, and not above 11, 3 cents perils. over 11, 3% cents perils and 10% ad val. Rallway Bars 1% cents perils. Rallway Bars, in part steel, 1 cent perils. Provided, that Mctal cemented, cast or made from Iron by the Besset.	Color   Section   Sectio
Reed & Barton dia 40 %	41. 11. 11. 11. 11. 11. 11. 11. 11. 11.	Metal cemented, cast or made from Iron by the Besse- mer or pneumatic process, of whatever form or de scription, shall be classed as	Gine White
Derby Silver Uo	Givanzed, 14 to 20, prime, # 2 8 te; 2d quality # 3 7 te 21 to 24 " # 6 " 8 c 35 to 36 " 9 te " 8 te 27 " 10 te	Tool	Charles Tollies, Line,
$ \begin{array}{llllllllllllllllllllllllllllllllllll$		Spring.   100   Homogeneous   1246   183-6   Tire.   1246   183-6   Machinery (round and square)   10 6 110	
T.n (Cowles Hdw. Co.)	Belgian. 10c 0ne piece Corrugated Sheet Iron Elbows.		
Manage	GHAROOAL IBON,  5 5)6 6 7 fach,  1250 3:50 4:50 5:23 6:50 per doz,	Sheet	Hardware & Iron Merchants, Buffalo, N. Y.
Xxe   Stone		Chrome Steel,	(Manufacturers of the Superior Brand,
Sand Stone	15-00 7.00 959 12-00 14-00 per doz.  OPPER -Do v. Pig. Bar and Ingot, 5c.; old copper, 4 cents \$\tilde{\text{cents}} \tilde{\text{min}} \text{ is a component of chief value)} 43 g ad	Tool, extra fine 40 @ 78c Spring 9 12c and upward Machinery 9 14c Hammer 15c	BUFFALO FORGED HORSE NAILS.
Grindstones. Family, Loring'sdis 10 s	vaiorem.	Hammer 15c, Gun or Homogeneous 16c English Steel - payable in gold, net.	These Nails are superior, being made with new and improved machinery and actually hammered from the very best brands of Norway Iron.
Joseph Dixon's	American Ingot	Extra Cast. 1846	
Rising Sunper gross \$5 to het	Braziers Copper, ordinary tises, over 16 oz., per square toot	" Best Double Shear " 17%3" Blister, 1st quality " 14%c	
Steel	Graziera'Copper, 12 oz. per square foot	German Steel, Best. "11%c de 2d quality. "10%c 3d quality. "9%c	
Star Try Squares and Bevels	Segment and Pattern Sheets	Sheet Cast Steel, 1st quality " 1740	
Winterbottom's Try and Mitredis 30&10 % Tacks, Brads, &cList of January 1, 1876.	Copper Bottoms, SSc. W 10net	" Sonare and Round " 19ke	
Tacks, Half Weight, Americandis 75& Full	No Copper is Sheathing except 14x48 nebes, and not to succeed 40 cs. to the square foot.  Sheathing Copper, tinned on one side, by the	" Mill. 13%c " Taper to 4 inch. 18c " Taper to 4 inch. 18c " Tape 3 and 3% inch 18c SPELTER—DUTY: In Page, Bare and Plates, \$1 50	
Full Sweues dis 556 Full dis 906 Carpet, Am. and Swedes dis 105 Leatner Head dis 106 Copper. 95 65c. dis Brads. Half Weight dis 508	case	per 100 lbs. Silestan, cash	
Shoe Nails-	14x45.	TIN-DUTY: Plates, Sneets, Tagger and Terne, Pic per Ib.; Electro-galvanized Plates, 2 cents per B.; Manufactures of, not enumerated, 85 per cent. adval. Bars, Blockand Pigs, free. Banca, subject to dutyof 10	
4-8ths and longer, 9c.; 34-8ths, 9½c. L B, dis 10 % Trunk, Clout and Finishing Nalls—  4	14 and 16 oz. and heavier		
Double Pointed Tacks	7 in., 14x62. 8 in., 14x66. 9 in., 14x60 it and 16 ox. and heavier 39c. By the case, 38c. P 5 (And all sizes not over 30 inches wide.)	Hanca. # 5 26c., currency Straits. # 5 22c., currency English # 5 24c., currency	7
Yes' Tap Borers. dis 10210 @ 25 5 Enterprise Mig Co dis 20 7 Tapes, Mensuring.	14 and 16 oz. and heavier	TIN PLATES, CURRENCY PRICES.  1 C 10x14. Prime Charcoai	
American Flasa and Cap Co	Brown & Sharp's Gauge the Standard except for Fine Wire.	12x12, 4 .8-75 14x20, 4 .9-00 1 X 10x14, 10/50	Orders solicited from the Trade.
Pas Trava.			
Tea Trays. American Tea Tray Codis 15 5 Thermometers.	BRASS MANUFACTURERS' PRICE LIST. October 27th, 1875.	12x12, " 11*00 14x20, " 11*50 D C 124x17 "	
American Tea Tray Co	BEASS MANUFACTURERS' PRICE LIST. October 37th, 1875  Net cash prices for Roll and Sheet Brass. Wire, &c., for quantities of 150 pounds and over at one time. For less than 150 pounds, three cents additional.	14x20, "	
American Tea Tray Co	BEASS MANUFACTURERS' PRICE LIST. October 27th, 1875* Net cash prices for Roll and Sheet Brass. Wire, &c., for quantities of 180 pounds and over at one time. For less than 180 pounds, three cents additional intelligence of the state of the	14300,   11150	G. B. WALBRIDGE & CO
American Tea Tray Co	BEASS MANUFACTURERS' PRICE LIST.  Net cash prices for Roll and Sheet Brass, Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional times. For less than 100 pounds, there cents additional All Nos. to No. 28, and widths 16. and under	1230    11:50   10   125   10   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   125   12	G. B. WALBRIDGE & CO
American Tea Tray Co	BRASS MANUFACTURERS' PRICE LIST.  October 27th, 1875*  Net cash prices for Roll and Sheet Brass, Wire, &c., for quantities of 130 pounds and over at one time. For less than 130 pounds, three cents additional times. HIGH BRASS  All Nos. to No. 25, and widths 14 in. and under	1420 ,   1175    D C 125/217	G. B. WALBRIDGE & CO.,
American Tea Tray Co. dis 15 5  Thermometers. Tin Case. dis 50&10 5  Teo Calks. P B 13c., dis 10 5  Tobacco Catters. Baterprise Mfs. Co. (Champion). dis 20 5  Wood Bottom. per dos \$12—dis 30&10 5  All Iron. per dos \$12—dis 30&10 5  All Iron. per dos \$10—dis 30&10 5  Tinuers' Teols and Machines. P. S. & W. dis 10 5  Traps. Came, Newhouse. dis 25 5  "Blake's Patent. dis 30 5; new list dis 10 5  Blake's Patent.	BEASS MANUFACTURERS' PRICE LIST.  Net cash prices for Roll and Sheet Brass. Wire, &c., for quantities of 120 younds and over at one time. For less than 160 pounds, it was additional.  All Nos. to No. 28, and widths 14 in. and under	14200,   11750	G. B. WALBRIDGE & CO., 83 Reade Street, New York.
American Tea Tray Co	BEASS MANUFACTURERS' PRICE LIST.  Net cash prices for Roll and Sheet Brass, Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, there center additional relations and visits	1420 ,   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   117	G. B. WALBRIDGE & CO., 83 Reade Street, New York. Proprietors of the DIAMOND HARDWARE WORKS. Manufacturers of
American Tea Tray Co	BEASS MANUFACTURERS' PRICE LIST.  Net cash prices for Roll and Sheet Brass, Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, there cents additions.  A'll Nos. to No. 28, and widths 14 in. and under	1420 ,   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   11750   117	G. B. WALBRIDGE & CO., 83 Reade Street, New York. Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of Diamond Augers & Auger Bits, Self-Feeding B. S. Drills
American Tea Tray Co	REASS MANUFACTURERS' PRICE LIST.  Net cash orices for Roll and Sheet Brass. Wire, &c., for quantities of 10 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	14300,	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.
American Tea Tray Co	REASS MANUFACTURERS' PRICE LIBT.  Net cash orices for Holl and Sheet Brass. Wire, &c., for quantities of 10 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	14200,	G. B. WALBRIDGE & CO., 83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.
American Tea Tray Co	Net cash prices for Roll and Sheet Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additions.  All Nos. to No. 28, and widths 14 in. and under	14200,   11150	G. B. WALBRIDGE & CO., 83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:
American Tea Tray Co	Net cash orices for Holl and Sheet Brass. Wire, &c., for quantities of 10 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	14200,   11150	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nails, &c.  GOODELL COMPANY  GOODELL COMPANY
American Tex Tray Co	Net cash prices for Roll and Sheet Brass. Wire, &c., for quantities of 10 pounds and over at one time. For less than 100 pounds, the state of the st	14200,   11150	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO.,  Tacks, Carriage, Tire and Stove Bolts, &c.  GOODELL COMPANY,  Lightning and Turn Table Apple Parers, &c.
American Tea Tray Co	Net cash prices for Holl and Sheet Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and the Brass. All Nos. to No. 28, and under	14200,	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO., Tacks, Carriage, Tire and Stove Bolts, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  Edge Tools Ayes and Hatchats
American Tea Tray Co	Net cash prices for Roll and Sheet Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1150   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO.,  Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS,  Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS,  Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO
American Tea Tray Co	Net cash prices for Roll and Sheef Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1150   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c. SHELTON CO., Tacks, Carriage, Tire and Stove Bolts, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS, Axe, Pick, and Sledge Handles, &c. DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles.  MATIONAL HORSE NAIL CO., Polished and Finished Horse Nails.
American Tex Tray Co	Net cash prices for Holl and Sheet Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and white Brass. All Ros. to No. 28, and white Brass. All Brass thinner than No. 38 is Platers' Brass. at. 45c Sheets wisk in and all sheets cut to particular sizes and lengths. Printers' Rules.  40 Sheets wider than 30 in and under 40 in. 40c Sheets wider than 30 in and under 40 in. 40c Sheets wider than 30 in and under 40 in. 40c Sheets wider than 30 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in and under 40 in. 40c Sheets wider than 50 in. 40c Sheets wider than 50 in. 40c Sheets Sheets of the sheets of th	1420    1150   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO., Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS, Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles.  PHILLIPS MFG. CO., Withdrawing Angular Boring Machines.
American Tex Tray Co	REASS MANUFACTURERS' PRICE LIBT.  Net cash orices for Holl and Sheet Brass. Wire, &c., for quantities of 10 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1150   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO., Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE WYRS, Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles.  PHILLIPS MFG. CO., Withdrawing Angular Boring Machines.  C. E. JENNINGS & CO., Shovels, Spades and Scoops.
American Tea Tray Co	Net cash prices for Roll and Sheef Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170    1170	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c.  SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS, Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles.  PHILLIPS MFG. CO., Withdrawing Angular Boring Machines.  C. E. JENNINGS & CO.,  BRISTOL SAW CO.,
American Tea Tray Co	REASS MANUFACTURERS' PRICE LIBT.  Net cash orices for Holl and Sheet Brass. Wire, &c., for quantities of 120 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1150   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manafacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuls, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO.,  Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS,  Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS,  AXC, Pick, and Sledge Handles, &c.  DERBY SILVER CO.,  Fine Plated Spoons, Forks and Ladles.  PHILLIPS MFG. CO.,  Withdrawing Angular Boring Machines.  C. E. JENNINGS & CO.,  Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.
Thermometers.  Tin Case.  The Calks.  To Calks.  To Calks.  To Case.  To Cas	Net cash orices for Holl and Sheet Brass. Wire, &c., for quantities of 120 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1150   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252   1252	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS, Axe, Pick, and Sledge Handles, &c. DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles. PHILLIPS MFG. CO., Withdrawing Angular Boring Machines. C. E. JENNINGS & CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.
Thermometers. dis 50±10 s Thermometers. dis 50±10 s To Case. dis 50±10 s Wood Bottom. per doz \$10±30±10 s Wood Bottom. per doz \$10±30±10 s Nashua Lock Uo's. per doz \$10±30±10 s Nashua Lock Uo's. dis 50±10 s Nashua Lock Uo's. dis 50±10 s Tinuers' Tools and Minchines. dis 50±10 s Traps. Came, Newhouse. dis 25 s "Peck, stow & Wilcox. dis 50 s Hotckhiss. oid list dis 30 s; new list dis 10 s Blake's Patent. dis 50 s Hotckhiss. oid list dis 30 s; new list dis 10 s Blake's Patent. dis 50 s Nut Co. do doz holes 15 æ 16c net Sound, Wire. p doz \$10 sto 2 to net s guare. dis 50 s Patent Chocker (Union doz holes 15 æ 16c net Sound, Wire. p doz \$10 sto 2 to net s guare. dis 50 s Patent Self Settling. per dos holes 2c net Trowets. Lottrop's Brick and Plastering. dis 10 s Disston's Brick and Plastering. dis 10 s Garden. dis 55 s Brades' Brick. dis 5 s Brades' Brick. dis 5 s Brades' Brick and Plastering. dis 30 s Garden. dis 25 s Worrall's Brick and Plastering. dis 30 s Garden. dis 30 s We guillators (Window). Nickel and Cheese. dis 50 s We guillators (Window). per dozen \$16*00 @ 18*00  ** Peter Wrights dis 30 s Buckus and Union. dis 26 s Sew Filers, Bonney's per doz \$200 dis 20 s Buckus and Union. dis 26 s B	Net cash prices for Holl and Sheet Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and the Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and the Brass.  All Nos. to No. 28, and width over 14 to 90 in. inclusive	1420    1150   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c. SHELTON CO., Tacks, Carriage, Tire and Stove Bolts, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS, AKE, Pick, and Sledge Handles, &c. DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles. PHILLIPS MFG. CO., Withdrawing Angular Boring Machines. C. E. JENNINGS & CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ""  ""  ""  ""  ""  ""  ""  ""  ""
Thermometers. dis 50 to 10 to 15 to	Net cash prices for Roll and Sheef Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1430    1150   1242    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manafacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuls, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO.,  Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS,  Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS,  AXC, Pick, and Sledge Handles, &c.  DERBY SILVER CO.,  Fine Plated Spoons, Forks and Ladles.  PHILLIPS MFG. CO.,  Withdrawing Angular Boring Machines.  C. E. JENNINGS & CO.,  Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.
Thermometers.  Tin Case.  To Calks.  Winsted  To Calks.  Winsted  To Calks.  Winsted  To Calks.  Winsted  To Bacco Cutters.  Enterprise Mix. Co. (Champion).  Wood Bottom.  Per dox \$i/3 - dis 504.10 \$  Wood Bottom.  Nashna Lock Uo's.  Per dox \$i/3 - dis 504.10 \$  Wingre' Tools and Minchines.  Tinuers' Tools and Minchines.  Traps.  Came, Newhouse.  Sale 25 \$  Peck, stow & Wilcox.  Blake's Patent.  Mouse, Wood Choker.  Wilcox.  Fatent Chocker (Union Wook holes 15 & 18c nat 5 ounce.  Found, Wire.  Found,	REASS MANUFACTURERS' PRICE LIBT.  Net cash orices for Holl and Sheet Brass. Wire, &c., for quantities of 120 pounds and over at one time. For ress than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	11-50   DC 128-2477   DX 128	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO., Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts. WOOLWORTH HANDLE W'KS, Aze, Pick, and Sledge Handles, &c.  DERBY SILVER CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezer.
Thermometers. Tin Case.  The Galks. Winsted Tohnco Cutters. Enterprise Mfs. Co. (Unampion). All 100. All 1700. All 1	Net cash orices for Holl and Sheet Brass. Wire, &c., for quantities of 10 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1150   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250   1250	C. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. & Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuta, Washers, Crow Bars, Horse Nails, &c. SHELTON CO., Tacks, Carriage, Tire and Stove Bolts, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts. WOOLWORTH HANDLE W'KS, Axe, Pick, and Sledge Handles, &c. DERBY SILVER CO., Fine Plated Spoons, Forks and Ludles. PHILLIPS MFG. CO., Withdrawing Angular Boring Machines. C. E. JENNINGS & CO., Shovels, Spades and Scoops.  A fall list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezer.  Not the CHEAPEST, but
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Thermometers. dis 50±10 s The Casks. dis 50±10 s To Cask. dis 50±10 s To Cask. dis 50 s To bacco Cutters. dis 50 s Enterprise Mig. Co. (Champion). per dos \$10 dis 50 s Will fron Lock Uo's. per dos \$10 dis 50 s Tinners' Tools and Mackines. per dos \$18 00 dis 50 s Tinners' Tools and Mackines. per dos \$18 00 dis 50 s Tinners' Tools and Mackines. dis 10 s Traps. dis 50 s Came, Newhouse. dis 25 s Peck, stow & Wilcox. dis 30 s Hotckhiss. oid list dis 30 s; new list dis 10 s Blake's Patent. dis 30 s; new list dis 10 s Blake's Patent. dis 40 s holes 16 c 18c net Round, Wire. dis 40 dos holes 16 c 18c net Square. dis 50 s 20 net Case. dis 50 s 20 net Square. dis 60 s 20 dis 10 s Patent Solf Setting. per dox holes 2c net Trowers. Lothrop's Brick and Plastering. dis 15 s Peace's Plastering. dis 15 s Peace's Pristering. dis 55 s Brade's Brick. dis 5 s Brade's Brick and Plastering. dis 30 s Garden. dis 30 s Garden. dis 50 s Treston. dis 50 s Treston. dis 50 s Treston. dis 50 s Treston. dis 50 s Brick dis 60 s Brick d	Net cash prices for Roll and Sheet Brass. Wire, &c., for quanticles of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and the Brass.  All Nos. to No. 28, and the Brass.  All Nos. to No. 28, and width over 14 to 90 in. inclusive	1420    1150   1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO., Tacks, Carriage, The and Stove Bolts, &c.  SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE WYKS, Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles. PHILLIPS MFG, CO., Withdrawing Angular Boring Machines.  C. E. JENNINGS & CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezer.  Not the CHEAPEST, but the BEST.  FOUR STYLES—FOURTEEN SIZES.
Thermometers. Tin Case.  The Case.  dis 50x105  To Case.	Net cash prices for Roll and Sheet Brass. Wire, &c., for quantities of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, and the Brass.  All Nos. to No. 28, and the Brass.  All Nos. to No. 28, and width over 14 to 90 in. inclusive.  3.40 (Nos. 100 No. 28, and widths over 14 to 90 in. inclusive.  3.50 (Nos. 28, and widths over 14 to 90 in. inclusive.  3.50 (Nos. 28, and widths over 14 to 90 in. inclusive.  3.50 (Nos. 28, and widths over 14 to 90 in. inclusive.  3.50 (Nos. 28, and widths over 14 to 90 in. inclusive.  3.50 (Nos. 28, and widths over 14 to 90 in. inclusive.  3.50 (Nos. 28, and widths over 14 to 90 in. and over 15 in. and over 16 in. and over 16 in. and over 16 in. and over 16 in. and over 18 in. and	1420    11:50   12:50   12:50   12:50   12:50   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:52   12:5	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Mandfacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELFON CO., Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE W'KS, AXC, Pick, and Sledge Handles, &c.  DERBY SILVER CO., Fine Plated Spoons, Forks and Ladles. PHILIPS MFG. CO., Withdrawing Angular Boring Machines. C. E. JENNINGS & CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Cream Freezer.  Not the CHEAPEST, but the BEST.  FOUR STYLES—FOURTEEN SIZES.  GEARED FREEZERS.  No. 30
Thermometers.  Tin Case.  The Calks.  Winsted  Tobucco Cutters.  Encryptise Mig. Co. (Champion).  All Iron	Net cash prices for Roll and Sheet Brass. Wire, &c., for quanticles of 100 pounds and over at one time. For less than 100 pounds, three cents additional.  All Nos. to No. 28, anchesive and widths over 14 to 20 in. inclusive.  All Nos. to No. 28, anchesive and widths over 14 to 20 in. inclusive.  Over 30 in. to 30 in., inclusive.  All Brass thinner than No. 38 is Platers' Brass. at 45c Sheetz Axis in. and all sheets cut to particular sizes and lengths.  Printers' Rules.  All Brass thinner than No. 38 is Platers' Brass. at 45c Sheetz Axis in. and all sheets cut to particular sizes and lengths.  Printers' Rules.  All Brass thinner than No. 30 is Platers' Brass. at 45c Sheetz Axis in. and all sheets cut to particular sizes and lengths.  Printers' Rules.  All Brass thinner than No. 30 in and under 40 in 45c Sheetz Axis in. and all sheets cut to particular sizes and lengths.  All Brass thinner than Sin and under 40 in 45c Sheetz Axis in. and all sheets cut to particular sizes and lengths.  Printers' Rules.  All Brass thinner than Sin and under 40 in 45c Sheetz Axis in. 45c Shee	1420    1150   1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242    1242	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nalls, &c.  SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE WKS, Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO., Pibe Plated Spoons, Forks and Ladles.  PHILLIPS MFG. CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezer.  Not the CHEAPEST, but the BEST.  FOUR STYLES—FOURTEEN SIZES.  GEARED FREEZERS.  No. 19.  No. 20.  No. 20.  Size.  GEARED FREEZERS.
Thermometers.  Tin Case.  The Calks.  Winsted  Tobacco Cutters.  Enterprise Mfg. Co. (Champion)	BRASS MANUFACTURERS' PRICE LIST.  October 77th, 1875;  Net cash prices for Roll and Sheet Brass, Wire, &c., for quantities of 109 pounds and over at one time. For less than 109 pounds, three cents additional.  All Nos. to No. 28, and widths 16 in. and under	1420    11-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-50   12-5	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO.,  Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS,  Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE WKS,  Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO.,  Fine Plated Spoons, Forks and Ladles.  PHILLIPS MFGs. CO.,  Withdrawing Angular Co.,  Withdrawing Angular Co.,  Shovels, Spades and Scoops.  A fall list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezer.  Not the CHEAPEST, but the BEST.  FOUR STYLES—FOURTEEN SIZES,  No. 19  Server.  Search Freezers.  No. 19  GEARED FREEZERS.  No. 19  10  11  12  13  14  15  16  16  17  18  19  19  10  10  11  12  13  14  15  16  17  18  19  19  10  10  11  12  13  14  15  16  17  18  19  19  10  10  11  12  13  14  15  16  17  18  19  19  10  10  11  12  13  14  15  16  17  18  19  19  10  10  11  12  13  14  15  16  17  18  19  19  10  10  11  12  13  14  15  16  17  18  19  19  10  10  11  12  13  14  15  16  17  18  19  19  10  10  11  11  12  13  14  15  16  17  17  18  19  19  10  10  11  11  12  13  14  15  16  17  18  19  19  10  10  10  11  11  12  13  14  15  16  17  18  19  19  10  10  10  10
Thermometers. Tin Case. dis 50±10 5 Thermometers. Tin Case. dis 50±10 5 The Calkis. Winsted Pabacco Cutters. Enterprise Mfr. Co. (Champton) dis 50±10 8 Tebacco Cutters. Enterprise Mfr. Co. (Champton) dis 50±10 8 Wood Bottom per doz \$12-dis 20±10 2 All Iron. per doz \$19*00-dis 50±10 8 Nashus Lock Uo. s. per doz \$19*00-dis 50±10 8 Nashus Lock Uo. s. per doz \$19*00-dis 50±10 8 Traps. Same, Newhouse. dis 20 5 Game, Newhouse. dis 20 5 Blake's Patent. Monse, Wood Choker. dis 20 5 Blake's Patent. Monse, Wood Choker. doi list dis 30 5 Blake's Patent. Monse, Wood Choker. doi list dis 30 5 Blake's Patent. Monse, Wood Choker. doi list dis 30 5 Blake's Patent. Monse, wood Choker. doi list dis 30 5 Blake's Patent. Monse, doi list dis 30 5; new list dis 10 5 Blake's Patent. Monse, doi list dis 50 5; new list dis 10 5 Blake's Patent. Monse, doi list dis 50 5; new list dis 10 5 Blake's Patent. Monse, doi list dis 50 5; new list dis 10 5 Blake's Patent. Blake's Patent. District dis 10 5 Blake's Patent. District dis 10 5 Blake's Patent. District dis	BRASS MANUFACTURERS' PRICE LIST.  Net cash prices for Roll and Sheet Brass, Wire, &c., for quanticles of 100 pounds and over at one time. For less than 100 pounds, but Brass additional.  All Nos. to No. 28, and widths 16 in. and under	1420    1150   1242    1750   1242    1750   1242    1750   1242    1750   1242    1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1750   1	G. B. WALBRIDGE & CO.,  B3 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manufacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nails, &c.  SHELTON CO.,  Tacks, Carriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS,  Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE WKS,  Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO.,  Fine Plated Spoons, Forks and Ladles.  PHILLIPS MIGS & CO.,  Shovels, Spades and Scoops.  A fall list of goods manufactured and for sale by us sent on application.  The BEST.  FOUR STYLES—FOURTEEN SIZES,  No. 19.  No. 19.  S. 29.  No. 19.  S. 20.  Seare Del Rezerre.  Seare Del Reserve.  GENEVA TOOL CO., Hoes, Rakes, Forks, etc.  GOODELL COMPANY.  Lighting and Tura Table Apple Parera, &c  ELEPHANT  GENEVA TOOL CO.,  Gelle Tools, Natichets.  H. T. MILLER, Heavy Brass Pad Locks.  BRISTOL SAW CO.,  Circular, Cross Cut, and Mill Saws.  A fall list of goods manufactured and for sale by us sent on application.  The BEST.  FOUR STYLES—FOURTEEN SIZES,  No. 19.  S. 20.  So. 20.  S
Thermometers. Tin Case. dis 50±10 5  Toe Calks. Winsted Pacco Cutters. Entryprise Mfr. Co. (Ohampion) dis 20 5  Wood Bottom per dox \$13-04 890±10 2  All Iron. per dox \$19*01—dis 50±10 3  All Iron. per dox \$19*01—dis 50±10 3  Nashua Lock Uo.'s. per dox \$19*01—dis 50±10 3  Tinners' Toels and Mackines. P. S. & W. dis 10 5  Traps Came. dis 25 5  Entryprise Mfr. Co. (Ohampion) per dox \$19*01—dis 50±10 3  Traps Came. dis 25 5  Entryprise Mfr. Co. (Ohampion) per dox \$19*01—dis 50±10 3  Traps Came. dis 50±10 3  Holichias. dis 10 5  Entryprise Mfr. Co. (Ohampion) dis 10 5  Entryprise Mfr. Co. (Ohampion) dis 10 5  Entryprise Whouse. dis 25 5  Entryprise Whouse. dis 25 5  Entryprise Whouse. dis 25 5  Entryprise Wholes and Mackines.  Pacent Cocker (Union Nut Co.). dox holes 15 49 180 net Square. dis 25 5  Patent Chocker (Union Nut Co.). dox holes 15 49 180 net Square. dox dox holes 25 0 net Square. dox dox holes 25 0 net Square. dox dox dox holes 25 net Square. dox	BRASS MANUFACTURERS' PRICE LIST.  Net cash prices for Roll and Sheet Brass. Wire, &-2., for quantities of 130 pounds and over a one time. For less than 100 pounds the central additional.  All Nos. to No. 28, and widths 14 in. and under	1420    1150    1250    1252    1250    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252    1252	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Mansfacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  Also, Agents for:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nails, &c.  SYRACUSE BOLT WORKS,  Norway Iron, Philadelphia Carriage Bolts.  WOOLWORTH HANDLE WIS,  Axe, Pick, and Sledge Handles, &c.  DERBY SILVER CO.,  Fine Plated Spoons, Forks and Ladles.  PHILLIPS MFG, CO.,  Withdrawing Augular Boring Machines.  C. E. JENNINGS & CO.,  Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezer.  Not the CHEAPEST, but the BEST.  FOUR STYLES—FOURTEEN SIZES.  ORDER STRANGE ST
Thermometers Tin Case. dis 50±10 \$  The Calks. Winsted	BRASS MANUFACTURERS' PRIOE LIST.  October 77th, 1975.  Net cash prices for Roll and Sheet Brass., Wire, 40., for geantities of 130 pounts and over at one time. For less than 100 pounts, three cents additional.  HIGH BRASS.  All Nos. to No. 28, and widths 14 in. and under	1150   DC 125/217   To X 12/217   To X 12/	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manafacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts. WOOLWORTH HANDLE WYS, Axe, Pick, and Sledge Handles, &c. DERBY SILVER CO., Fine Plated Spoons, Forks and Ludles. PHILLIPS MFG, CO., Withdrawing Angular Boring Machines. C. E. JENNINGS & CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezers.  No. 19.  SERVEY TOOL CO., Hose, Rakes, Furks, etc.  SOMPLANY.  Lightining and Turn Table Apple Parera, &c.  ELPHANT  Eggs Tools, Axes and Hatchets.  NATIONAL HORSE NAIL CO., Polished and Finished Horse Nails.  PENN LOCK WORKS, Heavy Broad Locks.  BRISTOL SAW CO., Circular, Cross Cut, and Mill Saws.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezers.  No. 19.  SERVEY TOOL CO., Hose, Rakes, Furks, etc.  SOMPLANY.  Egen Tools, Axes and Hatchets.  NATIONAL HORSE NAIL CO., Polished and Finished Horse Nails.  PENN LOCK WORKS, Heavy Brazel Locks.  BRISTOL SAW CO., Circular, Cross Cut, and Mill Saws.  GEARED FREEZERS.  No. 19.  SERVEY TOOL CO.,  MILLER BROS. CUTLERY a Specialty.  The BEST.  FOUR STYLES—FOURTEEN SIZES,  SOMPLE STAME STREETERS.  No. 19.  SERVEY TOOL CO., Short Styles of the Street St
Thermometers Tin Case. dis 50±10 \$  The Calks. Winsted	BRASS MANUFACTURERS' PRIOE LIST.  October 77th, 1975.  Net cash prices for Roll and Sheet Brass., Wire, 40., for geantities of 130 pounts and over at one time. For less than 100 pounts, three cents additional.  HIGH BRASS.  All Nos. to No. 28, and widths 14 in. and under	1150   DC 125/217   To X 12/217   To X 12/	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manafacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nails, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bolts. WOOLWORTH HANDLE WYS, Axe, Pick, and Sledge Handles, &c. DERBY SILVER CO., Fine Plated Spoons, Forks and Ludles. PHILLIPS MFG. CO., Withdrawing Angular Boring Machines. C. E. JENNINGS & CO., Shovels, Spades and Scoops. A full list of goods manufactured and for sale by us sent on application.  44 CHAMPION IMPROVED
Thermometers. The Calks. Winated Tebacco Cutters. The Calks. Winated Tebacco Cutters. Enterprise Mfr. Co. (Champion) All Iron. Solution.  Per dox \$1/20.—dis 20.410 20 5. Wood Bottom.  Per dox \$1/20.—dis 20.410 20 5. All Iron.  Nashua Lock Uo.*s.  Per dox \$1/20.—dis 20.410 20 5. All Iron.  Nashua Lock Uo.*s.  Per dox \$1/20.—dis 20.410 20 5. All Iron.  Traps.  Game, Newhouse.  "Pack, Stow & Wilcox.  "Pack, Stow	BRASS MANUFACTURERS' PRICE LIST.  October 27th, 1975- October 27th	1430	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manafacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  AL50, ACENTS FOR:  PRATT & CO., Nuts, Washers, Crow Bars, Horse Nalls, &c.  SHELTON CO., Tacks, Carriage, Thre and Stove Bolts, &c. SYRACUSE BOLT WORKS, Norway Iron, Philadelphia Carriage Bots. WOOLWORTH HANDLE W'KS, AX, Pick, and Sledge Handles, &c. DEBRY SILVER CO., Fine Plated Spoons, Forks and Ladles. PHILLIPS MFG. CO., Withdrawing Angular Borting Machines. C. E. JENNINGS & CO., Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  44 CHAMPION "IMPROVED"  ICE Cream Freezer.  Not the CHEAPEST, but the BEST.  FOUR STYLES—FOURTEEN SIZES, GEARED FREEZERS. No. 35.  S. 36. S. 38.
Thermometers	BRASS MANUFACTURERS' PRICE LIST.  October 27th, 1975- October 27th	1430    1150    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750    1750	G. B. WALBRIDGE & CO.,  83 Reade Street, New York.  Proprietors of the DIAMOND HARDWARE WORKS.  Manafacturers of  Diamond Augers & Auger Bits, Self-Feeding B. S. Drills  STOVE LID LIFTERS, SPOKE SHAVES, &c.  MILLER BROS. CUTLERY a Specialty.  ALSO, AGENTS FOR:  PRATT & CO.,  Nuts, Washers, Crow Bars, Horse Nalls, &c.  SHELTON CO.,  Tacks, Corriage, Tire and Stove Bolts, &c.  SYRACUSE BOLT WORKS,  Norway Iron, Philadelphis Carriage Bolts.  WOOLWORTH HANDLE WKS,  AXC, Pick, and Stedge Handles, &c.  DERBY SILVER CO.,  Philatel Spoons, For Song, Machines.  C. E. JENNINGS & CO.,  Shovels, Spades and Scoops.  A full list of goods manufactured and for sale by us sent on application.  "CHAMPION" IMPROVED  ICE Gream Freezers.  Not the CHEAPEST, but the BEST.  FOUR STYLES—FOURTEEN SIZES.  GEARED FREEZERS.  No. 29.  No. 2

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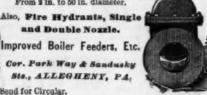
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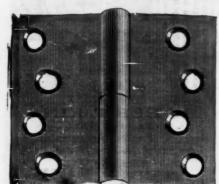
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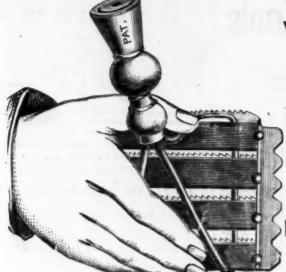
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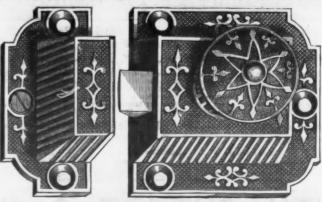
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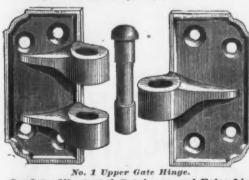
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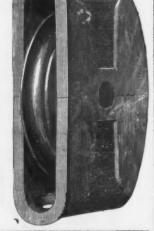
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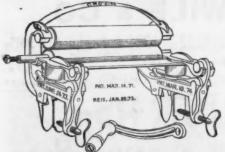


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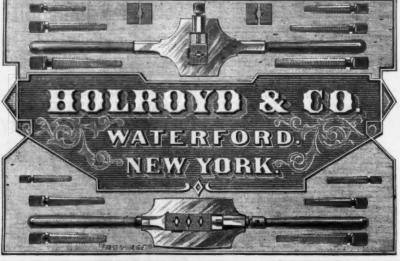
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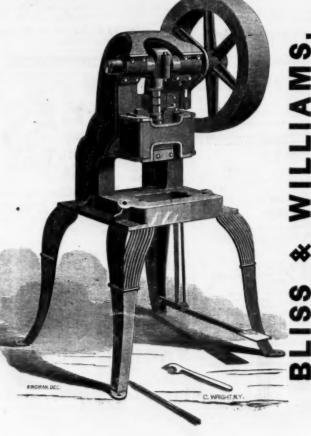


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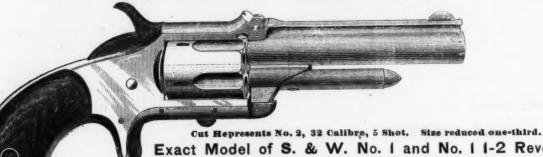


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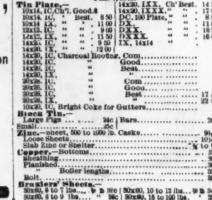
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	No. 2	1
	Galvanized iron         5½c         7 c         9½c           No. 16 to 20         13c         No. 27         .13c           21 to 24         13c         38         .10c	P
	Russia Iron.   No. 1 Stained.   16c   Perfect   16c   In Sheets, 1c, higher.   American Russia.   B   Insheets, 1c, higher.	
	Lead Pipe, in full colis 9 & Pig. 7%c Lead Pipe, when cut. 9 & Bar 8%c Sheet Lead 10c Wire-Bright di 4 &	A
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	Axes - Blue Jacket   11 00	BB
	A (Extra, \$2.50, B (No.1) \$2.00, C (No. 2) \$1.50 \( \) doz Blind Hinges.— Orror Washburn's	В
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	Common. Snell's quality. each 3 50  Braces.—Barber's. dis 40&5 4  Backus. dis 50 4  Spofford's. dis 50 4	1
	Star Japaned   new list net	C
	Butts Union Drilled Loose Joint.       dis 45&10 x	C
	Wrought Table Butts and Back Flaps Trevised Hist, dis 30  Wrought Narrow Butts. reduced, dis 30  Cards.— reduced, dis 30  Curry Cards. No. X per doz. 1073	Ca
	Horse "No. X, "0'80, dis 30 5 Wool "No. 8X, "2'50, dis 15 5 Cotton "No. 10, "5'0, dis 10 5 Cartridges. "U.S. Cartridge Co. dis 60 5	C
	Churns,—Buck Bros." Shank Goods. add 25 Socket. add 25 Churns,—Lightning—Redheffer patent. 8 5 6 gail	F
	Wrought Narrow Butts.	F
1	Corn Hooks. per doz 27 % % % % % % % % % % % % % % % % % %	G
	Cow Ties. dis 10  Dividers.—Cook's Nicket Plated. dis 15   Door Springs.—Moseley—  Per doz. \$9:00 12:00 15:00 18:00 30:00	G
	Door Springs Moseley   dis 15 x	HH
	American	H
	Nicholson new net nat Wheeler, Madden & Clemson	H
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	M., B. & D., sond cast steel, adze eye, No. 1, \$10; 125,576	H
	Hammond dis 124 Hanggre & Rollers.—Novelty dis 3045 Anti-Friction dis 3045 Hatchets.—Underhill Edge Tool Co dis 3045 C. F. Dowe, warranted Cast Steel—	H
	C. F. Dowe, warranted Cast Steel—Shingling. 0, \$4'15: 1, \$5'25: 2, \$5'30 Claw 1, 5'75: 2, 6'25 Lathing. 1, \$5'50 Axe Fattern. 1, \$7'00: 2, 7'50 Broad. 0, \$5'75; 1, \$6'50; 2, \$7'30: 3, \$9'25: 4, \$10'75: 5, \$12'75: 6 \$14'75	M
	5, \$1270 6 \$1475  **Hugen	M Na Pa
		Pi
•	Lend.—Sheet 10c. Pine 916c 1ess 105	F
	Locks.—Norwalk Lock Co reduced list, dis 40&5 s  Mattocks.—  K. P. & Co., axe finish. long cutter. \$13 00—net Snort cutter. \$12 00—net Snort cutter. \$12 75—net Meat Cutters.—'Miles's' Challenge dis 30 s No. 1, \$2200; 2, \$8000 s, \$4000 Metal.—Babbitt. No. 1, \$50; 3, \$50: 5, 15c \$16 Nails.—Jod and larger \$30 under the second list. \$10 under the second list. \$	Pi
	Nail Pullers.—Little Giant—Smailper doz., \$220 Little Giant—Large	P
	Plumb & Levels.—Stanley	Pi
	Wi-ington, Cooley & Cr	K
	Milled Axle	R
	Pocket Knives.—Conn. cutlery Co alew net list American Shear Co new net list Rail Karn Door.—For Novelty and Anti-Fric- tion Hangers	Si Sc
	Pulleys.—Axie.  Pulleys.—Axie. Frame Pol. Wheel No. 150, 50c., 1% in.; 16, 38c., 2 in. Common Axie No. 18, 34c., 1% in.; 25, 40c., 2 in. Milled Axie No. 2, 42c., 18, in.; 2, 50c., 2 in. Nashua Pat. Arie Bronzea Face 1% in., 50c., 2 in., 50c Cast Steel Axie Steel Axie 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	Si
	Sand Paper   dis 15 & 5 s     M. B. & D.   0 to 2, \$425; 2 to 3, \$475     Saws Hana and Panel     Wheeler, Madden & Clemson's, same list as "Diston's"   dis. 15 & 5     Disston's   dis. 15 & 7     Wheeler, Madden & Clemson X Cuts.   per ft. 376	SI
	ton w. dis. 15 etc. dis. 15 etc. dis. 15 etc. dis. 15 Wheeler, Madden & Clemson X Cuts	50
	Screws.—An. Screw Co., new list Sept. 1st 40 s Alken's 45 s 59 s Sept. Stones.— "Willoughby Lake," first quality 9 gross \$6:50 second quality 3:00 S 50 S	TIV
	Shoveis U. Ames.   dis 20 \$ M. B. & D.   dis 20 \$ Sifters Coal, Rice. & c.   dis 20 \$ Sifters Coal, Rice. & c.   dis 20 \$ Sifters Coal, Rice. & c.   dis 20 \$ Sifters W. C. & Co.   dis 30 \$ Signer Felkers W. Patridge, "original. & dox \$15 U Tools Alken s Pattern, & in set; Parrs. , \$6 5 per dox \$75 U Tools Chedda.	W
	Title but	1
•	Parker's Parallel gis 10 €	1
	Backus dis 25 s  "Howards" Parallel. dis 20 s  "Howards" Parallel. dis 20 s  Wardrobe Hooks.—Wire to drive. \$\pi\$ gross \$1 00  Weather Strips.—"Harmon's" per doz \$6, dis 10 s  Weigats.—\$1 mov Weigats. \$\pi\$ 15 \(\pi\$ \)  Weigats.—\$2 s  Weigats.—\$	IC IX IC IX
-3	Wire NettingUniton Wire Cloth Co., Green, Drab or Black. 5 ft 5c Wrenches,-Genuine Wrenches, G. A. Coes.dis 40&5 ft Walton	IC IX IC
50 30 50 50	Novelty and Tub No. 2Less than doz, \$72 00	St Er
10	Bench A  less than 2 doz \$90 00; 2 doz or more \$88 00   B  \$8 00	E
	Boston Metal Market.	Bi
88	Iron.—Best Refined Bar Iron	
le	Swedish Bar Irongold 6 115 50 Norway Shapesgold 4 117 50	

Wrought Scrap Iron	
Old Rails	25 00
Eng. Tool, gold 15%c	Spring 7 e
American Tool 14 c	Tire 5%c
Mach 85c	Sleigh Shoe 4%c
Tip Plates.—# Dox gold	Copper.— # D
1. Char. 10x14\$7'50	Ingot 2004C
I. C Coxe 10x146 50	Bolt Stc
Char. Roof. IC, 14x70, 7 00	Sheathing \$10
Coke " 1C, 14\20, 6 00 METALS.	Lead.
Pig Tin # B., gold	Pig 7%c
Banca 33e	Pipe 8.56
Straits, 17 c	ZincSheet. W h 10 C
English 17 c	mpelter # D 8%c
German 9 c	Autimony, gold # 2 16 C

Wrought Scrap Iron
Milesi - A S I
Steel.
Bessemer 614c Tor Calk 614c Tor Pintes.— # Dox gold Copper.— # B 1. #. Char. 10x14 #7-50 Ingot # B
1. d. Char. 10x14
METALS. Pig 734c
Banca 28c Pipe 8.55
English
ST. LOUIS.
Corrected sceniu by Semple, Brys & Co.  Apple Parers, —Conqueror. — 401, \$7 75 Hudson's Rotary. — 7 75  Axes.—Wm. Mann's, Red Warrior. — 402, \$10 75 Wm. Mann's, W. Stewart's. — 10 25 Handled. — 500ble Bitted. — 2, 50 H. L. B. & Co. — 1, & Co. — 10 75  "James & Co. — 11 25 Hunt's — 10 28 Hunt's — 10 28 Hunt's — 10 28 Hunt's — 10 28
A xes.—Wm. Mann's, Red Warrior \$\psi \delta \pi 10 \cdot 5 \\ Wm. Mann's, W. Stewart's
" Double Bitted " 2. 50 H. L. B. & Co. 's. L. & Co " 10 75
" Ploneer " 11 25
Hunt's Jones, Renry & Co.'s' Patent Lubricating, Half Patent, Swelled Taper, Plain Taper and Concord Ages.  Common Axies (Pat. Lubricating), 1½ Inca and unward.
per and Concord Axles
Common Axies (Pat. Lubricating), 1½ Inca and unward
Bella, - froy, Church, School and Farm Bella, * 5 40c "Improved Amalgam Bronzed." 15 in., \$200;
17 in., \$2 50; 19 in., \$4; 21 in., \$5; 24 in., \$14; 27 in. \$19 50; Belling"Boston Belting Co.'s Rubber 46 %
Botts.—Arms, Bell & Co.'s Carriage & Tire, dw 70610 %
Arms, Bell & Co.'s Machine
Broad Fast Joint
Charms, -Julian, No. 2, \$700; No. 8, \$770; No. 4, 20
Churns.—Julian, No. 2, \$7:00; No. 8, \$7:30; No. 4, \$8:50
Crater Wills.  American Senior. \$30:00: Am Junior. \$19:00dis 20 %  Corn Brill.—Campbell's Patent
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Carver, with 101n. Saws, \$450 a Saw
Drag Saw Machines.— Culver's iron Drag Sawdis 10 %
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Sanford No. 1, \$11 00: No. 2, \$8 10 net Files.—Black Diamond, Mill \$500 £ currency.
Hand Shellers. Special rates Cotton Glins.— Carver, with 10 in. Saws, 4:450 a Saw dis 22% 5 12 in. Saws, 45:05 a Saw dis 17; 5 Crow Bars.—Steel Pointed. * 5 6; 6 Crow Bars.—Steel Pointed. * 6
For ges.—Leystone Fortable Forge Co. s
Audum Mig. Co. Slav and Manure Forks. die 3.5  Garden Need Britte and Wheel Hoen.  Allen's Double Wheel Hoe. die 3.5  "Planet Drills and Wheel Hoen.  Allen's Double Wheel Hoe. die 15.5  "Combined Dril and Wheel Hoe. die 15.5  Grinding Hills.—Challenge Feed Mills. die 15.5  Grinding Hills.—Challenge Feed Mills. die 15.5  Braco'ord's French Burr Mills. uet Has.  Braco'ord's French Burr Mills. uet Has.  Hammers.—Macones Hammers. Be 100  Smiths' Hand. 200  Fandles.—No. I Fork, Hoe and Rake. die 20.5  No. 2 Fork, Hoe and Rake. die 3.9  No. 2 Fork, Hoe and Rake. die 3.9  Narrow Teeth.—I inch iron. 42  Karbed or Headed. 42  Hay und Cattou Presses.— Dederics Ratiroad. act list  Preptual. net ils  Hay Kalves.—
Planet Drill, Nos. 2 and 3
Grinding Mills.—Challenge Feed Mills dis 15 % Sedgeber's Nonparell Mills
Hammers.—Masons Hammers
Handles.—No. 1 Fork, Hoe and Rakedis 20 % No. 2 Fork, Hoe and Rakedis 8.1 %
% and % inch iron
Hay and Cottou Presses.— Dederics's Railroad
Hny Knives.— Perpetualnet iss
Lightning (Weymouth's Patent) P doz & 50 Horse Hay Fork.—Nellis' Harpoon \$6.50 each net.
Horse Nails, National Patent Pointed ac rate
National Patent Pointed, extra unished
Perpetual.  Hay Knives.  Dunn Edge Tool Co.'s \$1 or \$12 th net list Lightning (Weymouth's Patent). \$1 or \$12 th net for \$10
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Sandwich Lever. dis 10 %.  Horse "shees."  Bhode Island (Perkin's Pattern).
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Sandwich Lever.  Horse "shees."  Horse "shees."  Hole "shees."  Hole "shees."  Hole "so to the shees."  Hole "shees."  Hole "shees."  Boston Belting Co.'s Rubber Medium Sizes dis 04:10 %  Small Sizes, Hy.  drant. "shees."  Hole "shees."  Kelth, Logan & Co.'s Mattocks."  Grub Hoes.  Grub Hoes.  Woney Drawers."  Pierpont & Co.'s Excelsior. per doz \$8500 net  Naiis. "Wheeling Kiverside Bland. \$500 rates  Pack ing. "Boston Belting Co.'s Rubber, Pland. dis 90 s
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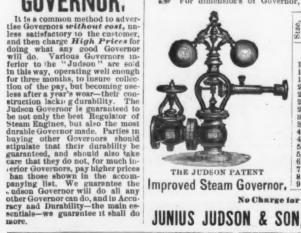
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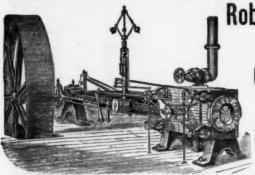
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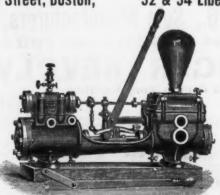
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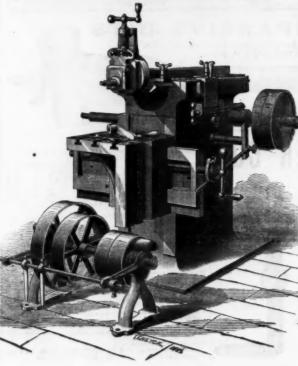
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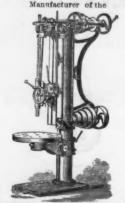
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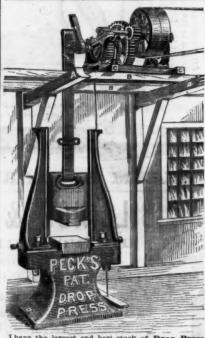
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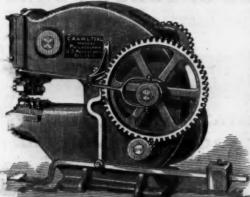
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REPORT OF JUDGES

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No. 318, Drawing, Drop & Punching Presses.

THE STILES & PARKER PRESS CO., Of Middletown, Conn.

The machinery exhibited by these makers is of a character that calls for special commendation. In addition to their well known punching presses, to which a new feature has been added in a press adjustable to an inclination for discharging work left above the die, there are exhibited by them a combined punch and shears, a drawing or blanking press, and a drop. nd a drop. In all these there is shown the highest mechanical

In all these there is shown the highest mechanical culture, applied to meet every practical requirement, to avoid every practical difficulty, and to calarge the range of application of the machines, by devices which are at once simple, elegant, and effective.
Your committee would unhesitatingly recommend for this exhibition the "Medal of Progress," but find such award debarred by the rule of the Institute, forbidding such award unless a Silver Medal has been previously awarded We, therefore, respectfully recommend the award of a Silver Medal.

A true copy from the Report on file.

JOHN W. CHAMBERS, Sec'y.



Franklin Institute, 1874, For Simplicity, Economy of Construction & Efficiency.

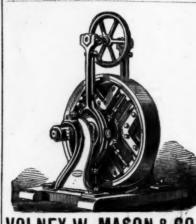
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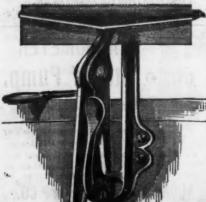
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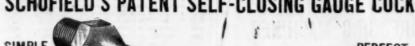
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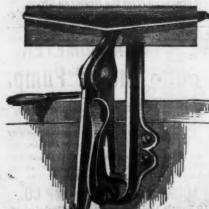
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